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ABSTRACT

The relationship between student's home environment and achievement in science was examined using data from the 1985-86 National Assessment of Educational Progress, Science Assessment, for a nationally representative sample of American school age children in grades 7 and 11. Science achievement and background data were also collected for grade 3. The home environment variables included: (1) parent characteristics; (2) students' use of free time; (3) educational support of students at home; and (4) indicators of interest in reading at home. Mean sample sizes were 11,298 for grade 7 and 6,534 for grade 11. Eighteen tables are presented to relate these variables to science subscales (life science, physics, chemistry, earth and space sciences, and nature of science), while keeping race/ethnicity, gender, and type of school attended constant. The results support previous findings that the educational attainment of parents is related to the educational achievement of students. Data suggest that the more television that White students view, the lower their science achievement; this finding was not true for Black and Hispanic students. Problems with the use of some of the background questions are identified. It is concluded that the percentage correct metric is not sensitive enough to compare the relationship of several variables to performance on the science assessment. Eight figures illustrate the discussion. (SLD)

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SCIENCE ACHIEVEMENT AND HOME ENVIRONMENT:

National Assessment of Educational Progress 1985-1986

A paper presented to the American Educational Research Association

Steven Gorman and Ching C. Yu
National Center for Education Statistics

This paper is intended to promote the exchange of ideas among researchers and policy makers. The views are those of the authors, and no official support by the U.S. Department of Education is intended or should be inferred.

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HIGHLIGHTS

Science achievement and background data were collected in the 1985-86 National Assessment of Educational Progress on a nationally representative sample of American school age children in grades 3, 7, and 11. Data on the seventh- and eleventh-grade students were analyzed. These analyses are helpful in providing insights into the relationships of student achievement in specific content areas and the home environment.

- White students whose mother and/or father graduated from college scored significantly higher than those whose parent(s) did not finish high school or received a high school diploma. This finding held across both sexes. This relationship was even more pronounced at the eleventh grade than at seventh. However, this relationship was not significant for blacks and Hispanics.

- Students who lived with both parents scored higher than those who live with only one parent. However, the performance of those who lived with only one parent was no significantly different from those who were not living with either parent.

- The more hours per day that white students watched television, the lower their science performance. This was not the case for black and Hispanic students.

- Interacting at home on science class related activities, such as discussing science class, getting help with science homework or projects was not related to science performance.

- Students whose families subscribed to a newspaper scored significantly higher than those who did not. Although this relationship held for both sexes, this relationship was not significant for individual race/ethnic subgroups.

- Because of small sample sizes, it was not possible to detect any significant differences between public school and private school on the comparisons reviewed.

- The amount of parental involvement was not significantly different among whites, blacks or Hispanics, nor between male and female students.

- Using percentage correct as a metric does not provide the sensitivity to compare the relationship of a number of education-related background variables to the performance on the science assessment.

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SCIENCE ACHIEVEMENT AND HOME ENVIRONMENT

INTRODUCTION

The performance of our nation's students in science has been of increasing concern to educators, policy makers and the general public. This concern was most visible at the September 1989 Education Summit which resulted in a set of national goals in education. One of the goals ambitiously stated "By the year 2000, U.S. students will be the first in mathematics and science achievement." It is also important that American students become proficient: by 1995, of the 10 fastest-growing occupations, eight will be science-based, needing problem-solving and reasoning skills (National Research Council, 1990).

An objective of another goal mentioned the crucial impact of the home environment: "Every parent in America will be a child's first teacher". The degree to which a parent continues to be a child's teacher, that is, to continue to show concern for the child's educational development has been debated by researchers on the impact it has on the child's performance in school.

This report looks at a number of home environment variables, including parental education, use of free time at home, educational support at home, and availability of reading items at home. It will identify if there is any relationship with performance on the NAEP science scale or the subscales, and if this relationship holds for a number of race, ethnic, or gender subgroups, or for those who attend private schools.

METHODOLOGY

The analyses that were conducted in this study used achievement and background data from Version 2.0 of the Public Use Data Tape for the 1985-86 National Assessment of Educational Progress (NAEP). These data provide a nationally representative sample of school age children in grades 3, 7, and 11. The performance of third grade students was not analyze because not all five subscales are available at this grade. In addition, science is not a prominent subject in the curriculum in the early grades. This study used data from grades 7 and 11 who both answered NAEP science items and responded to the science background questions. Mean sample sizes were 11298 for grade 7 and 6534 for grade 11. Because a variant of matrix sampling (Spiral balanced incomplete block) was used for administering not only cognitive, but also background questions, the sample sizes responding to some questions (the home environment items) are smaller. Detailed information on the NAEP design, and the statistical tests and computation of standard errors is described in Appendix A.

Students in grades 7 and 11 were asked to report on a number of background questions prior to attempting the cognitive questions. One group of questions asked about their parent's educational attainment, and the number of parents that they lived with.

Another set questioned their use of time out of school (frequency of watching television, amount of time spent doing homework). An additional eight questions asked about the help they get at home doing science-related activities (e.g., going to a science museum, doing science projects). Another set of four questions were asked concerning the types of reading materials available in the home. The background questions analyzed in this study are listed in Figure 1.

The NAEP science cognitive items were grouped into subscales by their content. The content of the subscales are described in detail in *Science Objectives: 1985-86 Assessment* (National Assessment of Educational Progress, Princeton, NJ, 1985). The subscales used in this report represent:

Life Sciences. This subscale covers evolution, ecology, behavior, genetics and development, diversity of organisms, energy transformations (such as photosynthesis and cellular metabolism), and cellular and molecular biology.

Physics. This subscale covers mechanics (motion, force, principles of conservation), waves and optics, electricity and magnetism, modern physics (atomic, nuclear, relativity), and heat and kinetic theory.

Chemistry. This subscale covers structure of matter (nuclear, atomic and molecular), stoichiometry, reactions of matter, states of matter and nature of solutions, and periodic classification are covered in this content area.

Earth and Space Sciences. This subscale covers the solar system, galaxies, and the universe, the oceans, earth's atmosphere and weather, agents and processes of change in the earth's surface, earth materials, and the earth's history.

Nature of Science. This subscale covers science processes, assumptions of science, characteristics and limitations of the scientific methods, and ethics in science.

The subscales are a relative, not absolute indicator of the amount of knowledge that a student has in that content area. Although these subscales provide a good measure of how students at one grade perform relative to other students in the same grade, scores cannot be compared between grades 7 and 11.

ANALYSIS

Eighteen tables were prepared which related parent characteristics, use of free time, educational support at home, and indicators of interest in reading at home to the science subscales, holding race/ethnicity, gender, and type of school attended by the examinee constant. These data were weighted to reflect each examinee's probability of being selected, and then averaged across all examinees. In accordance with National Center for Education Statistics (NCES) standards, those cells with less than thirty

FIGURE 1

NAEP BACKGROUND ITEMS USED

Parent Characteristics

1 -- How Far in School Did Your Mother Go?

2 -- How Far in School Did Your Father Go?

3 -- How Many Parents Live at Home?

Free time Usage

4 -- How Much T.V. Do You Watch Each Day?

5 -- How Much Time Each Day Is Spent on Homework?

Educational Support at Home

6 -- At Home Do You Talk About What You Learned?

7 -- At Home Do You Get Help with Science Homework?

8 -- At Home Do You Get Help with Science Projects?

9 -- At Home Does Someone Show You How to Do Science Experiments?

10 -- At Home Do You Watch and Discuss Science Program?

11 -- Do You Go to Science Museum with Someone from Home?

12 -- Do You Talk About Science Topics with Someone at Home?

13 -- Do You Read Science Books at Home?

Reading Interest Indicators at Home

14 -- Does Your Family Get a Newspaper Regularly?

15 -- Is There a Dictionary in Your Home?

16 -- Is There an Encyclopedia in Your Home?

17 -- Are There More Than 25 Books in Your Home?

students were not included in the analysis. These cells are marked with an * to indicate small cell size. The rows of Tables 1-17 represent the responses to the background questions selected (e.g. "How Much T.V. Do You Watch Each Day?"). The "non-public" school category includes both parochial andnon-parochial private schools. Because of the spiral BIB design, the total across subscales is not the sum of the individual subscales. The estimates of the average percent correct have been weighted to represent the students enrolled in 1985-86 at that grade level. However, because of limited English proficiency or physical or educational handicaps, some students were excluded from the assessment. Estimates for the excluded students were not imputed for this report.

LIMITATIONS OF THE DATA

There are two limitations in the data that are used in this report. First, the background data are self-reported, and are subject to unreliability. A 1985-86 special study on NAEP language minority children (Baratz-Snowden, et al, 1988) showed that for seventh grade language minority students, there was only a 59% agreement on mothers' education, and 56% agreement on fathers' education. There was a tendency to overstate the education of their parents. For items in the home, the High School and Beyond Study (1984) found that self-report of responses of two administrations 18 months apart provided test-retest agreements in the range of 67% to 98%. However, it also showed that the reliability of responses increased as the age of the student increased. In addition, studies have shown that blacks and low SES respondents provide less accurate data (Walsh and Buckholdt, 1970; Borus and Nestel, 1971; Kerckhoff, Mason, and Poss, 1973; and Cohen and Orum, 1972).

A second limitation is the size of missing data on the parental education variables. For example, 26.2% of the seventh graders did not report their father's educational attainment, and 18.6% did not report on their mothers.

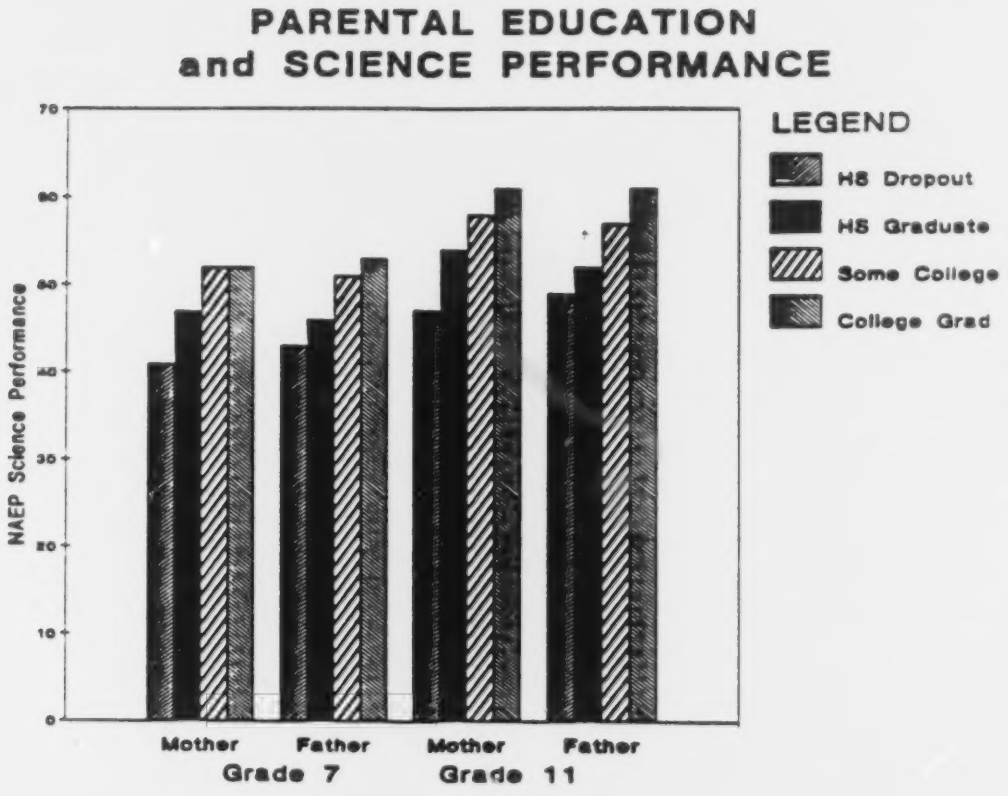
RESULTS

Main Effects: Parent Characteristics

Significant differences were found in science achievement between the three indicators of parent characteristics: academic achievement of mother and father, and the presence of both parents at home at both ages. Figure 2 displays graphically the relationship of parent's education with NAEP science performance overall. Figure 3 shows the subscales for which significant differences were found at each grade level.

Previous studies have shown similar effects of parental education on achievement. That is, the higher the level of educational achievement, the greater the test performance. However, this study does not support the findings of other studies that

FIGURE 2



the mother's educational attainment is more important than the father's in predicting achievement.

Of the five subscales considered, all the subscales except physics were significantly related to parental education comparing both high school dropouts and high school graduates with college graduates. For the physics subscale, there were only significant differences between high school dropouts and college graduates at both grades. There were no significant differences on any subscales comparing those with at least one parent having some college and those with a parent who graduated from college. There were significant differences between those who had both parents living at home compared to those with only one parent at home.

This was also true for all subscales at grade eleven, and all but physics and nature of science subscales at grade seven. Across all subscales, there were no significant differences in achievement between those with either one or both parents living at home and those with neither parent living at home. However, at grade 7, those living with both parents scored better in life science than those living with neither parent.

FIGURE 3

NAEP Science Subscales for Which Significant Differences in Achievement Were Found by Grade Level and Parent Characteristics

GRADE LEVEL	Nature of Science	Earth & Space	Life Science	Physics	Chemistry
Parental Characteristic					
Grade 7					
Mother's Education	X !	X !	X !	X	X !
Father's Education	X !	X !	X !	X	X !
Both Parents at Home		*	*		
Grade 11					
Mother's Education	X !	X !	X !	X !	X !
Father's Education	X !	X !	X !	X !	X !
Both Parents at Home	*	*	*	*	*

X - Achievement significantly higher for children of college graduates than high school dropouts.

! - Achievement significantly higher for children of college graduates than high school graduates.

* - Achievement significantly higher for children with both parents at home than with only one parent at home.

SOURCE: NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

INTERACTIONS

The relationship of parent's education to science achievement held for males and females also. The relationship also held for whites. However, because of smaller sample sizes, this relationship was not statistically significant for blacks and Hispanics. The relationship of the number of parents living at home with science achievement was statistically significant only for males, not for any other subcategory researched (i.e. race and type of school).

Main Effects: Use of Free Time

American students' use of their free time is an indicator of their interest in educational achievement. American students spend more time watching television than doing homework. In fact, "the average 16-year old has spent more time watching television than in formal schooling" (Koretz, 1987). These figures coincide with data from the recent National Educational Longitudinal Study of 1988 report (1990) which says that the average eighth grader spends four times as much time watching television as doing homework. Although studies have shown that watching television improves readiness for school, the beneficial effects of television diminish after age six. Significant differences were found between students with different television watching habits at both grades. Figure 4 shows the subscales for which significant differences were found at each grade level. At seventh grade, those who watched television less than two hours a day as well as those who watched five hours or less per day achieved significantly higher science scores than those who watched six or more hours of television. At grade eleven, those who watched six or more hours of television per day scored significantly lower than those who watched less than two hours per day. In fact, those who watched three to five hours per day performed worse than those who watched less than two hours of television per day. Noteworthy is the fact that the performance of those who report watching six or more hours of television per day drops markedly from grade seven to grade eleven. This may be due, in part, to the fact that eleventh graders reported spending more time doing homework each day.

A relationship between the amount of homework performed and science achievement was found using the science proficiency scores (Mullis & Jenkins, 1988). This is consonant with many other cross-sectional studies (CBO, 1987). The lack of a relationship for this study may be due to several reasons, most notably that the use of the percentage correct score does not measure the performance of students as well as the NAEP proficiency score. The NAEP proficiency score is based upon item response theory, which uses the characteristics of each item and the response pattern of each examinee to estimate ability. Since the 1986 NAEP science test is composd of multiple choice items, the impact of guessing on percentile score provides an upward bias of low achieving students. In addition, the homework variable is complex, that is, the time spent on homework may be due to several factors. Academically adept students may be able to finish their homework more quickly than those less able. Teachers may

FIGURE 4

NAEP Science Subscales for Which Significant Differences in Achievement Were Found by Grade Level and Use of Free Time

GRADE LEVEL	Nature of Science	Earth & Space	Life Science	Physics	Chemistry
Free Time Use					
Grade 7					
Amount of TV Watched	X !	X !	X !	X	X
Amount of Homework					
Grade 11					
Amount of TV Watched	X !	X !	X !	X	X
Amount of Homework					

X - Achievement significantly higher for examinees who watch two hours or less than those who watch six hours or more of television per day.

! - Achievement significantly higher for examinees who watch three to five hours or less than those who watch six hours or more of television per day.

SOURCE: NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

award additional homework assignments to those having trouble with the material (or to those more able). Also, some students will either not complete their homework, or not even attempt it.

INTERACTIONS

The relationship between the number of hours of television watched and science achievement held for both males and females. However, for Hispanics and blacks, the decrease in performance with increased television viewing was not statistically significant. The percentage of eleventh grade Hispanics who watch over 3 hours television per day is twice that of their white peers, and for black students is four times that of whites. There were no differences between the level of television viewing for males and females

Main Effects: Educational Suppport at Home

Because of the Spiral BIB design (see Technical Notes) and particularly small sample size on this subset of background questions, there were fewer students administered these questions. That, combined with the use of the percentile score metric, did not provide for significant differences between any individual question and achievement for the total across the subscales. Figure 5 shows that the only science subscale for which significant differences were found by grade level and educational support at home is at grade 7, going to a science museum with someone from home. In addition to looking at the individual questions, a composite was developed which was the sum of all the educational support questions. For each of these questions answered in the affirmative, the composite was incremented by one point. This composite ranged from 0 to 8 home activities. For analysis, this composite was categorized into three groups: 0-2, 3-5, and 6-8 activities. There were no statistically significant results for this composite.

INTERACTIONS

There were no significant differences found for any individual items, nor for the composite of educational support questions for gender or race/ethnic subgroups. However, it is interesting to note, as shown in Figures 6 and 7, that for the subset of students sampled, the percentage of students reporting educational support at home for various science-related activities was similar for the three race/ethnic subgroups. However, this finding should be interpreted along with the finding reported earlier that the parents of blacks and Hispanics are allowing their children to watch more television than whites.

Main Effects: Reading Interest Indicators at Home

The types of reading materials that are available in the home is another indicator of the emphasis placed on schooling by the parents. Students were asked whether the

FIGURE 5

NAEP Science Subscales for Which Significant Differences Were Found by Grade Level and Educational Support at Home

GRADE LEVEL	Nature of Science	Earth & Space	Life Science	Physics	Chemistry
Educational Support for Science					
Grade 7					
Talk about School					
Get Help w/ Homework					
Get Help w/ Projects					
Get Help w/ Experiments					
Watch Science Programs					
Go to Science Museum	X	X			X
Talk about Science					
Read Science Books					
Grade 11					
Talk about School					
Get Help w/ Homework					
Get Help w/ Projects					
Get Help w/ Experiments					
Watch Science Programs					
Go to Science Museum					
Talk about Science					
Read Science Books					

X - Achievement significantly higher for examinees who go to the science museum with someone from home than those who do not.

SOURCE: NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

FIGURE 6

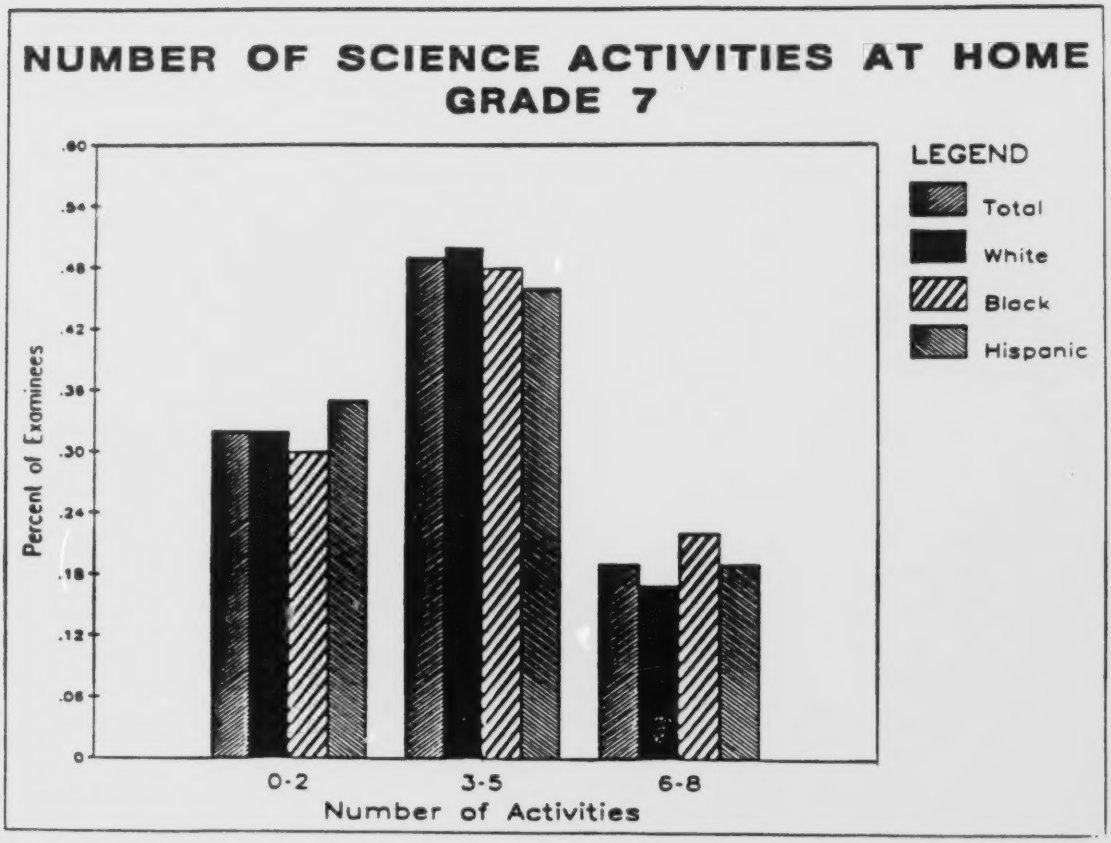

NUMBER OF SCIENCE ACTIVITIES AT HOME
GRADE 7
LEGEND
Total
White
Black
Hispanic
Percent of Examinees
.60
.54
.48
.42
.36
.30
.24
.18
.12
.06
0
0-2
3-5
6-8
Number of Activities

FIGURE 7

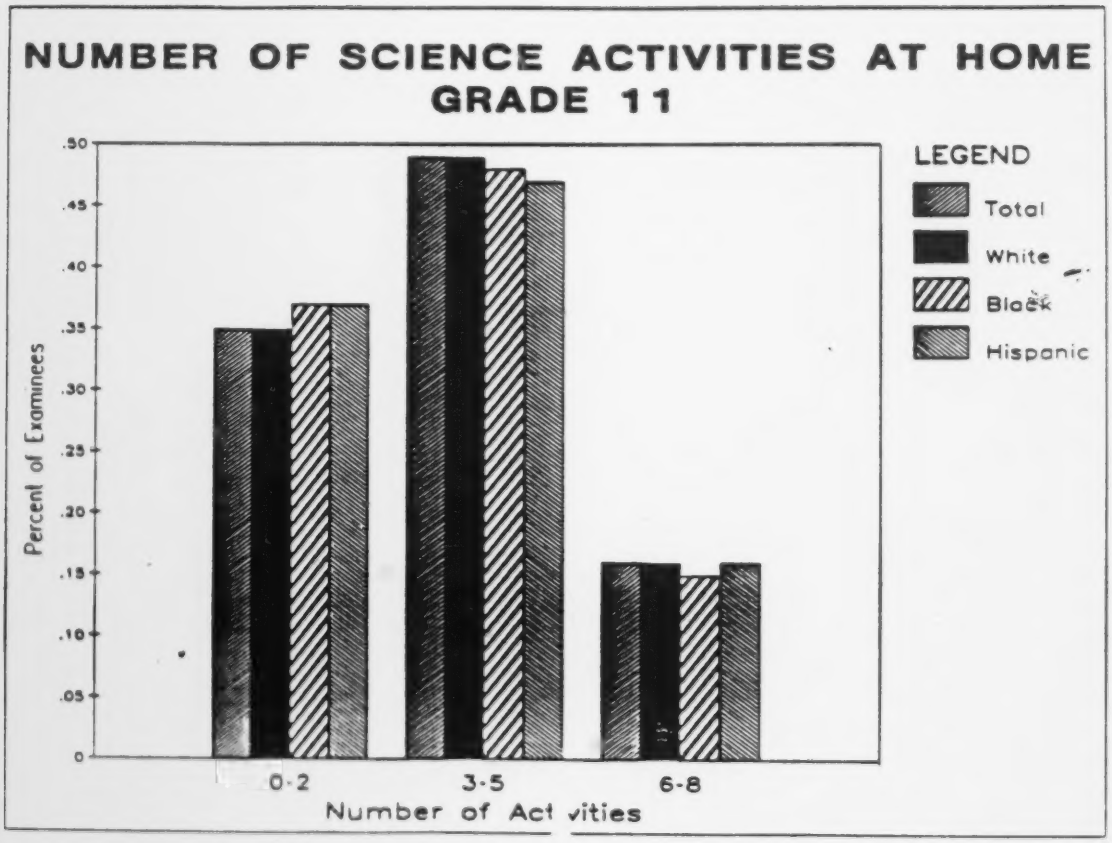

NUMBER OF SCIENCE ACTIVITIES AT HOME
GRADE 11
Percent of Examinees
.50
.45
.40
.35
.30
.25
.20
.15
.10
.05
0
0-2
3-5
6-8
Number of Activities
LEGEND
Total
White
Black
Hispanic

FIGURE 8

NAEP Science Subscales for Which Significant Differences in Achievement Were Found by Grade Level and Reading Interest Indicators at Home

GRADE LEVEL Reading Interest Indicator	Nature of Science	Earth & Space	Life Science	Physics	Chemistry
Grade 7					
Newspaper at Home	X	X	X		X
Dictionary at Home	X	X	X	X	X
Encyclopedia at Home		X	X		
> 25 Books at Home	X	X	X	X	X
Grade 11					
Newspaper at Home	X	X	X	X	X
Dictionary at Home	X				
Encyclopedia at Home					
> 25 Books at Home	X	X	X	X	X

X - Achievement significantly higher for examinees who have the item at home than those who do not.

SOURCE: NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

family subscribes to a newspaper, whether they own a dictionary, and if there is an encyclopedia in the house. Significant differences were found in science achievement between the reading interest indicators at home: having a newspaper subscription, and more than 25 books at home were significant at both grades. Having a dictionary and encyclopedia at home were significant only at the seventh grade. Figure 8 shows the subscales for which significant differences were found at each grade level.

INTERACTIONS

The relationship between having a regular subscription to a newspaper and science achievement also held for male and female seventh grade students, but not for any race/ethnic subgroups. Indeed, this variable seems to operate like an SES indicator: the distribution of students without a regular newspaper at home is mostly among the black and Hispanic students.

None of the home reading interest indicator items were related to science achievement for blacks and Hispanics. Noteworthy is the fact that there were fewer than 30 eleventh grade students who reported no dictionary at home in the white, black or Hispanic categories.

CONCLUSIONS

The results discussed above support previous findings that the educational attainment of the parents is related to the educational achievement of the children. It also supported previous research that the more television that is watched, the lower the science achievement. Furthermore, black and Hispanic students, who have typically performed lower on achievement tests, watch more television than their white peers.

The study also identifies problems with the use of some background questions. Less than 5% of the students reported that there was not a dictionary at home. Given the possible unreliability of self-reporting, the utility of this item is very questionable.

Black and Hispanic students report that they receive as much educational support at home as their white peers, however, they also report watching more television. In fact, on average, they spend as much or more time watching television than attending school and doing homework.

This study also identified that the use of the percentage correct metric is not sensitive enough to identify significant differences between background variables and achievement. This was clearly shown by the conflicting results shown on the relationship between the amount of homework reported and science achievement. In this report, there was no relationship shown. However, in the *Science Report Card* (Mullis & Jenkins, 1988) there was a statistically significant relationship.

In addition, the spiraling of background questions to subsamples of examinees reduces the sample size, limiting their effectiveness in identifying relationships.

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TECHNICAL NOTES

1. The NAEP data were used differently for this tabulation than they were in "The Science Report Card: Elements of Risk and Recovery" (Mullis, I.V.S. and Jenkins, L.B., Educational Testing Service, September 1988). First, data in this tabulation were analyzed by grade level only, rather than by age and grade level of the student as was done in the *Science Report Card*. Second, average percent correct figures were used rather than scale scores provided by item response theory models, and third, standard errors were produced using an approximate adjustment based on design effects rather than by the more exact, but more complex jackknife procedures. These procedures are discussed more fully in *Introduction to Variance Estimation* (Wolter, K. M. New York: Springer-Verlag 1985).

2. Although the science items were grouped into five content area subscales for both grades 7 and 11, the items for the two grades differed and the subscales were not equated across grades and content areas in this analysis. Therefore, the mean p's presented in the tabulation should be used to compare group performance within a grade and for a particular content area, but not across grades or content areas.

3. In computing the percents correct for individual students, items that were left blank, whether omitted or not reached, were treated as incorrect responses in this analysis. However, not-reached items were excluded from the denominator of the formula used to calculate the item-by-item response percentage presented in the ETS tables of the NAEP data. Since not-reached items were treated as incorrect in this tabulation, the results may be different from the values given in the ETS summary table. The main reason of using percents correct is to prevent the bias associated with IRT scales. More detailed information is given in "Bayes Modal Estimation in Item Response Models" by Robert J. Mislevy in *Psychometrika* (p.177-95, June 1986).

4. Percent correct values were not included for cells in the tabulation which contained fewer than 30 students (indicated by * in the cells). Consequently, the totals for those three row variables may not add to the overall total presented at top of each table.

5. The estimates presented in this tabulation were calculated using appropriate weights to represent all seventh- or eleventh-grade students enrolled in schools in the U.S. except Alaska and Hawaii in 1986. Some students were excluded from the NAEP sample because of limited English proficiency or severe handicap. The number of excluded students was 1382 for grade 7 and 1965 for grade 11. Estimates for these excluded students were not included in the tabulation.

6. The assessment booklet design involved used a variant of matrix sampling, called balanced incomplete block (BIB) spiraling for not only the cognitive items, but also some of the subject-specific background items. As a result, the sample sizes for some analyses were much smaller.

6. As pointed out in Note 1, standard errors are estimated by simple random sampling

adjusted for design effects, in place of the more exact but complex jackknife procedures. The technique we used is simpler than the jackknife procedures but provides reasonably good estimates of standard errors. Sample sizes and standard errors corrected to account for the effects of the sample design are presented, by cell, in this tabulation. The standard errors have been adjusted using the design effects procedures suggested by the Educational Testing Service and discussed in the NAEP Users' Guide. To conduct statistical tests comparing subgroups of interest, or to investigate the quality of a particular estimate, the reader should use the standard errors provided, rather than standard errors calculated using simple random sample procedures.

7. Statistical tests of significance were conducted for cell comparisons, though their results are not shown in this report. Two-tailed z-tests were used to determine whether the differences in the average percent correct between cells were statistically significant at the .05 level. The Bonferroni procedure was used to adjust the level of significance to prevent the build-up of Type 1 error. The alpha level was adjusted separately for each of the five subscales. Adjustment was based on the number of z-tests run on each subscale.

The 1985-86 National Assessment of Educational Progress Public-Use Data Tapes are currently available and can be ordered from the Educational Testing Service, Rosedale Road, Princeton, NJ 08541-0001, (609) 734-1327.

Requests for additional information concerning this report should be addressed to:

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TABLE 1.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"HOW FAR IN SCHOOL DID YOUR MOTHER GO? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
HOW FAR IN SCHOOL DID YOUR MOTHER GO ?																		
NOT FINISH HI	47	2.3	722	44	1.9	1002	44	1.8	1192	36	1.9	1019	34	1.9	866	41	1.8	1370
FINISH HI	54	1.4	1914	49	1.1	2682	50	1.1	3151	41	1.2	2691	37	1.2	2253	47	1.1	3581
SOME ED AFTER HI	60	2.1	827	54	1.7	1163	55	1.7	1353	45	1.9	1174	41	1.8	991	52	1.7	1534
GRAD FROM CO	60	1.6	1430	55	1.3	2060	55	1.2	2388	44	1.4	2025	42	1.3	1686	52	1.3	2709
NOT REPORTED	47	1.9	1120	43	1.4	1565	45	1.4	1837	38	1.5	1571	35	1.5	1306	42	1.4	2104
TOTAL W/IN SUBSCALE	54	0.8	6013	50	0.6	8472	50	0.6	9921	41	0.7	8480	38	0.7	7102	47	0.6	11298
HOW FAR IN SCHOOL DID YOUR MOTHER GO BY RACE/ETHNICITY OF EXAMINEE **																		
WHITE																		
NOT FINISH HI	50	3.2	400	47	2.6	542	48	2.5	640	39	2.6	560	37	2.6	465	44	2.4	737
FINISH HI	57	1.8	1262	52	1.4	1737	53	1.4	2048	43	1.5	1750	40	1.5	1455	49	1.4	2336
SOME ED AFTER HI	63	2.5	580	56	2.0	818	57	2.0	942	46	2.3	819	43	2.1	694	54	2.0	1077
GRAD FROM CO	62	2.0	959	58	1.6	1364	58	1.5	1578	46	1.7	1347	45	1.7	1108	55	1.6	1799
BLACK																		
NOT FINISH HI	39	5.7	117	37	4.1	178	36	4.0	223	29	4.3	177	29	4.1	167	33	4.0	245
FINISH HI	41	3.2	375	39	2.5	541	40	2.4	634	32	2.6	545	28	2.4	461	36	2.4	717
SOME ED AFTER HI	49	4.9	161	46	3.8	233	46	3.8	266	38	4.1	230	34	3.9	189	43	3.8	302
GRAD FROM CO	47	3.6	304	43	2.8	454	41	2.7	533	35	2.9	451	33	2.7	383	39	2.6	606
HISPANIC																		
NOT FINISH HI	42	4.6	187	41	3.7	250	39	3.6	295	32	3.7	251	28	3.6	210	36	3.5	347
FINISH HI	44	4.0	245	42	3.0	365	43	3.0	415	38	3.3	352	30	3.1	300	40	3.0	468
SOME ED AFTER HI	46	7.5	64	43	6.4	85	50	5.9	111	41	6.4	94	32	6.0	85	43	6.0	120
GRAD FROM CO	47	5.5	120	45	4.4	173	43	4.4	193	36	4.8	160	31	4.5	135	42	4.4	214
HOW FAR IN SCHOOL DID YOUR MOTHER GO BY GENDER OF EXAMINEE **																		
MALE																		
NOT FINISH HI	45	3.6	298	44	2.9	403	45	2.9	466	39	3.0	415	35	3.0	344	42	2.8	555
FINISH HI	52	2.0	969	50	1.6	1364	50	1.6	1590	43	1.7	1353	38	1.6	1130	47	1.6	1808
SOME ED AFTER HI	60	3.1	392	55	2.5	533	55	2.5	628	47	2.7	547	44	2.6	467	53	2.5	712
GRAD FROM CO	59	2.2	790	56	1.7	1148	56	1.7	1320	46	1.9	1135	42	1.8	942	52	1.7	1501
FEMALE																		
NOT FINISH HI	48	3.1	424	44	2.4	599	44	2.3	726	35	2.5	604	34	2.4	522	41	2.3	815
FINISH HI	55	2.0	945	49	1.6	1318	50	1.6	1561	38	1.7	1338	37	1.6	1123	46	1.6	1773
SOME ED AFTER HI	60	3.0	435	53	2.3	630	55	2.3	725	43	2.6	627	39	2.4	524	51	2.3	822
GRAD FROM CO	60	2.4	640	53	2.0	912	54	1.9	1068	41	2.1	890	43	2.0	744	51	1.9	1208
HOW FAR IN SCHOOL DID YOUR MOTHER GO BY TYPE OF SCHOOL EXAMINEE ATTENDS **																		
PUBLIC																		
NOT FINISH HI	47	2.4	700	44	1.9	975	45	1.8	1157	37	1.9	991	34	1.9	840	41	1.8	1331
FINISH HI	53	1.5	1773	49	1.2	2493	50	1.1	2921	40	1.3	2498	37	1.2	2081	46	1.1	3326
SOME ED AFTER HI	60	2.2	748	53	1.8	1050	55	1.7	1228	44	2.0	1057	41	1.9	898	51	1.8	1393
GRAD FROM CO	59	1.7	1264	54	1.4	1826	54	1.3	2111	43	1.5	1787	41	1.4	1502	51	1.3	2392
NONPUBLIC																		
NOT FINISH HI	-	-	*	-	-	*	41	10.4	34	-	-	*	-	-	*	40	10.6	38
FINISH HI	59	5.2	141	54	4.4	188	50	4.0	229	42	4.6	193	37	4.2	172	49	4.2	254
SOME ED AFTER HI	64	6.8	79	60	5.7	113	57	5.6	125	47	6.1	117	45	5.8	93	56	5.6	141
GRAD FROM CO	63	4.7	166	59	3.9	234	59	3.6	277	47	4.2	238	50	4.2	184	55	3.7	317

- indictes not applicable
* indicates N<30
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

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GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
MOTHER EDUCATION COMPARISONS (Z=2.40 FOR 3 TESTS AT .025)						
NOT HI/GR CO	-4.42	-4.77	-4.80	-3.01	-3.62	-4.82
FIN HI/GR CO	-2.67	-3.15	-2.94	-1.66	-2.76	-2.85
SOME ED/GR CO	0.289	-0.28	0.047	0.384	-0.49	0.189
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.86 FOR 12 TESTS AT .025)						
WHITE						
NOT HI/GR CO	-3.37	-3.75	-3.61	-2.14	-2.41	-3.62
FIN HI/GR CO	-2.15	-2.79	-2.82	-1.38	-2.21	-2.54
SOME ED/GR CO	0.217	-0.58	-0.43	0.105	-0.58	-0.15
BLACK						
NOT HI/GR CO	-1.16	-1.26	-0.99	-1.25	-0.82	-1.22
FIN HI/GR CO	-1.15	-1.01	-0.19	-0.69	-1.20	-0.78
SOME ED/GR CO	0.442	0.695	1.278	0.579	0.166	0.825
HISPANIC						
NOT HI/GR CO	-0.77	-0.69	-0.55	-0.59	-0.64	-0.97
FIN HI/GR CO	-0.46	-0.44	0.074	0.412	-0.18	-0.22
SOME ED/GR CO	-0.08	-0.24	1.012	0.702	0.160	0.228
COMPARISONS BY GENDER OF EXAMINEE (Z=2.50 FOR 4 TESTS AT .025)						
MALE						
NOT HI/GR CO	-3.24	-3.58	-3.25	-1.98	-2.11	-3.23
FIN HI/GR CO	-2.30	-2.71	-2.37	-1.29	-1.73	-2.26
SOME ED/GR CO	0.371	-0.36	-0.06	0.180	0.600	0.201
FEMALE						
NOT HI/GR CO	-3.09	-2.90	-3.29	-1.77	-2.89	-3.38
FIN HI/GR CO	-1.66	-1.61	-1.71	-0.80	-2.19	-1.77
SOME ED/GR CO	-0.02	0.131	0.270	0.633	-1.26	0.132
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.50 FOR 4 TESTS AT .025)						
PUBLIC						
NOT HI/GR CO	-4.11	-4.38	-4.16	-2.68	-3.01	-4.32
FIN HI/GR CO	-2.59	-2.90	-2.33	-1.43	-1.88	-2.48
SOME ED/GR CO	0.352	-0.35	0.318	0.445	-0.08	0.224
NONPUBLIC						
NOT HI/GR CO		-15.1	-1.67	-11.1	-11.9	-1.38
FIN HI/GR CO	-0.66	-0.86	-1.66	-0.68	-2.13	-1.12
SOME ED/GR CO	0.108	0.202	-0.34	0.068	-0.71	0.118

TABLE 1.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"HOW FAR IN SCHOOL DID YOUR MOTHER GO? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
HOW FAR IN SCHOOL DID YOUR MOTHER GO ?																		
NOT FINISH HI	50	2.4	653	50	2.1	697	47	2.3	716	42	2.3	692	39	2.2	743	47	2.4	774
FINISH HI	55	1.4	1812	59	1.3	1976	56	1.4	2044	47	1.4	1916	47	1.3	2082	54	1.4	2190
SOME ED AFTER HI	60	1.7	1232	62	1.5	1340	61	1.6	1383	50	1.7	1296	51	1.6	1409	58	1.7	1481
GRAD FROM CO	62	1.5	1467	65	1.4	1605	63	1.5	1621	54	1.5	1555	55	1.5	1675	61	1.5	1764
NOT REPORTED	47	3.6	264	49	3.1	310	48	3.6	303	40	3.5	285	38	3.4	314	45	3.6	325
TOTAL W/IN SUBSCALE	57	0.8	5428	60	0.7	5928	58	0.8	6067	49	0.8	5744	49	0.8	6223	56	0.8	6534
HOW FAR IN SCHOOL DID YOUR MOTHER GO BY RACE/ETHNICITY OF EXAMINEE **																		
WHITE																		
NOT FINISH HI	53	3.4	322	53	2.9	357	52	3.2	365	44	3.2	347	42	3.1	371	51	3.3	392
FINISH HI	57	1.6	1372	62	1.4	1504	59	1.6	1557	49	1.6	1460	49	1.5	1584	56	1.6	1658
SOME ED AFTER HI	62	1.9	957	65	1.7	1041	63	1.9	1082	52	1.9	1005	53	1.8	1098	60	1.9	1150
GRAD FROM CO	63	1.7	1136	67	1.5	1250	65	1.7	1262	56	1.7	1206	57	1.7	1301	63	1.7	1369
BLACK																		
NOT FINISH HI	42	5.6	113	39	5.1	123	38	5.3	128	38	5.4	121	30	5.0	130	38	5.6	135
FINISH HI	43	3.8	254	44	3.5	268	42	3.7	282	38	3.7	257	34	3.5	285	41	3.8	308
SOME ED AFTER HI	48	4.8	161	45	4.2	180	47	4.7	180	39	4.7	170	39	4.4	183	45	4.8	195
GRAD FROM CO	52	4.1	209	50	4.0	227	46	4.2	228	40	4.0	227	39	3.7	240	47	4.2	251
HISPANIC																		
NOT FINISH HI	46	4.6	181	48	4.3	182	43	4.6	187	36	4.2	187	36	4.3	201	43	4.6	204
FINISH HI	48	5.0	146	48	4.6	160	45	5.0	162	40	4.9	153	38	4.6	167	45	5.0	177
SOME ED AFTER HI	52	6.7	81	51	6.2	83	54	6.8	87	42	6.7	82	46	6.8	87	52	6.9	95
GRAD FROM CO	59	7.6	60	56	7.0	59	55	8.0	59	49	7.7	56	49	7.9	60	55	7.9	66
HOW FAR IN SCHOOL DID YOUR MOTHER GO BY GENDER OF EXAMINEE **																		
MALE																		
NOT FINISH HI	51	3.7	273	53	3.2	294	48	3.5	303	46	3.5	293	41	3.4	313	49	3.7	323
FINISH HI	55	1.9	960	61	1.7	1041	57	1.9	1077	51	1.9	1024	49	1.8	1107	55	1.9	1157
SOME ED AFTER HI	62	2.4	591	69	2.1	639	63	2.4	658	55	2.4	623	55	2.3	670	61	2.4	709
GRAD FROM CO	63	2.0	774	69	1.8	845	65	2.0	854	58	2.0	828	56	2.0	883	63	2.1	934
FEMALE																		
NOT FINISH HI	49	3.1	380	47	2.8	403	47	3.1	413	38	2.9	399	37	2.9	430	45	3.1	451
FINISH HI	55	2.1	852	57	1.8	935	56	2.0	967	43	2.1	892	45	1.9	975	52	2.1	1033
SOME ED AFTER HI	58	2.3	641	56	2.1	701	60	2.3	725	46	2.4	673	48	2.2	739	55	2.4	772
GRAD FROM CO	62	2.2	693	60	2.0	760	61	2.2	767	50	2.3	727	53	2.1	792	58	2.3	830
HOW FAR IN SCHOOL DID YOUR MOTHER GO BY TYPE OF SCHOOL EXAMINEE ATTENDS **																		
PUBLIC																		
NOT FINISH HI	49	2.4	625	49	2.2	665	47	2.4	682	42	2.3	659	39	2.3	709	47	2.4	738
FINISH HI	55	1.5	1643	59	1.3	1795	56	1.5	1853	47	1.5	1734	47	1.4	1890	54	1.5	1990
SOME ED AFTER HI	60	1.8	1085	62	1.6	1188	61	1.8	1227	51	1.8	1150	51	1.7	1250	58	1.8	1311
GRAD FROM CO	61	1.6	1231	65	1.5	1360	62	1.6	1368	53	1.7	1319	55	1.6	1415	60	1.7	1488
NONPUBLIC																		
NOT FINISH HI	-	-	*	56	10.9	32	50	10.9	34	42	10.4	33	42	11.0	34	50	11.2	36
FINISH HI	55	4.6	169	62	4.2	181	56	4.6	191	46	4.6	182	49	4.4	192	54	4.7	200
SOME ED AFTER HI	56	4.9	147	63	4.2	152	62	4.9	156	44	4.9	146	52	4.8	159	57	5.0	170
GRAD FROM CO	67	3.7	236	65	3.5	245	66	3.7	253	57	3.8	236	57	3.7	260	63	3.8	276

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
MOTHER EDUCATION COMPARISONS (Z=2.40 FOR 3 TESTS AT .025)						
NOT HI/GR CO	-4.41	-6.15	-5.68	-4.55	-6.05	-4.99
FIN HI/GR CO	-2.60	-3.35	-3.37	-3.31	-3.99	-3.36
SOME ED/GR CO	-1.25	-1.39	-0.85	-1.59	-1.75	-1.22
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.86 FOR 12 TESTS AT .025)						
WHITE						
NOT HI/GR CO	-2.63	-4.14	-3.54	-3.35	-4.16	-3.18
FIN HI/GR CO	-2.51	-2.62	-2.71	-3.10	-3.40	-2.77
SOME ED/GR CO	-0.66	-0.84	-0.67	-1.51	-1.58	-0.96
BLACK						
NOT HI/GR CO	-1.44	-1.68	-1.23	-0.22	-1.37	-1.23
FIN HI/GR CO	-1.54	-1.08	-0.82	-0.29	-0.99	-0.97
SOME ED/GR CO	-0.62	-0.77	0.063	-0.04	0	-0.37
HISPANIC						
NOT HI/GR CO	-1.52	-1.00	-1.33	-1.44	-1.40	-1.25
FIN HI/GR CO	-1.26	-1.01	-1.08	-0.98	-1.16	-1.05
SOME ED/GR CO	-0.73	-0.56	-0.12	-0.67	-0.29	-0.27
COMPARISONS BY GENDER OF EXAMINEE (Z=2.50 FOR 4 TESTS AT .025)						
MALE						
NOT HI/GR CO	-2.84	-4.43	-4.12	-2.96	-3.75	-3.35
FIN HI/GR CO	-2.60	-3.28	-2.86	-2.42	-2.81	-2.76
SOME ED/GR CO	-0.19	-0.07	-0.57	-0.73	-0.49	-0.53
FEMALE						
NOT HI/GR CO	-3.31	-3.84	-3.78	-3.07	-4.54	-3.44
FIN HI/GR CO	-2.22	-1.34	-1.86	-2.18	-2.72	-2.01
SOME ED/GR CO	-1.24	-1.36	-0.50	-1.18	-1.71	-1.00
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.50 FOR 4 TESTS AT .025)						
PUBLIC						
NOT HI/GR CO	-3.99	-6.00	-5.30	-4.14	-5.70	-4.65
FIN HI/GR CO	-2.76	-3.23	-2.87	-2.72	-3.54	-2.95
SOME ED/GR CO	-0.41	-1.29	-0.54	-0.86	-1.50	-0.89
NONPUBLIC						
NOT HI/GR CO		-0.79	-1.39	-1.40	-1.30	-1.11
FIN HI/GR CO	-1.90	-0.69	-1.69	-1.86	-1.52	-1.46
SOME ED/GR CO	-1.72	-0.40	-0.74	-2.10	-0.82	-1.03

TABLE 2.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"HOW FAR IN SCHOOL DID YOUR FATHER GO? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
HOW FAR IN SCHOOL DID YOUR FATHER GO ?																		
NOT FINISH HI	48	2.5	652	45	1.9	907	46	1.9	1058	38	2.0	936	36	1.9	794	43	1.9	1211
FINISH HI	53	1.6	1492	49	1.3	2134	49	1.2	2469	40	1.4	2105	37	1.3	1770	46	1.2	2824
SOME ED AFTER HI	57	2.4	655	53	2.0	906	55	1.9	1077	44	2.1	932	42	2.0	768	51	1.9	1215
GRAD FROM CO	61	1.5	1627	56	1.2	2320	56	1.2	2717	44	1.3	2307	43	1.3	1930	53	1.2	3084
NOT REPORTED	49	1.6	1587	44	1.2	2205	46	1.2	2600	38	1.3	2200	34	1.3	1840	42	1.2	2964
TOTAL W/IN SUBSCALE	54	0.8	6013	50	0.6	8472	50	0.6	9921	41	0.7	8480	38	0.7	7102	47	0.6	11298
HOW FAR IN SCHOOL DID YOUR FATHER GO BY RACE/ETHNICITY OF EXAMINEE **																		
WHITE																		
NOT FINISH HI	51	3.2	401	47	2.5	559	49	2.4	657	39	2.6	578	38	2.5	491	45	2.4	745
FINISH HI	57	2.1	925	51	1.6	1309	52	1.6	1510	42	1.8	1303	40	1.7	1078	49	1.6	1739
SOME ED AFTER HI	58	2.8	477	55	2.3	660	57	2.2	779	45	2.5	680	43	2.4	555	52	2.2	883
GRAD FROM CO	63	1.8	1159	59	1.4	1618	58	1.4	1880	46	1.6	1602	45	1.5	1332	55	1.4	2154
BLACK																		
NOT FINISH HI	40	6.5	93	40	4.9	138	39	5.0	153	35	5.1	137	30	5.1	113	37	4.8	184
FINISH HI	41	3.4	335	40	2.7	478	39	2.6	557	33	2.8	473	30	2.6	406	37	2.6	631
SOME ED AFTER HI	46	6.5	97	42	5.0	136	45	4.7	169	39	5.4	135	35	5.1	120	42	4.8	187
GRAD FROM CO	48	3.8	268	44	2.8	422	42	2.7	504	34	3.0	427	33	2.8	370	39	2.7	563
HISPANIC																		
NOT FINISH HI	43	5.0	150	39	4.2	197	39	4.0	230	31	4.1	207	31	4.2	176	37	4.0	262
FINISH HI	41	4.4	198	40	3.2	306	43	3.3	351	38	3.7	283	29	3.3	252	40	3.3	394
SOME ED AFTER HI	48	7.6	67	50	6.0	94	45	6.1	107	36	6.1	97	32	6.0	79	43	5.9	123
GRAD FROM CO	47	5.1	145	45	4.1	198	47	4.0	233	39	4.5	193	33	4.2	156	42	4.0	258
HOW FAR IN SCHOOL DID YOUR FATHER GO BY GENDER OF EXAMINEE **																		
MALE																		
NOT FINISH HI	46	3.5	324	45	2.8	437	46	2.8	499	40	2.9	450	35	2.8	370	44	2.7	578
FINISH HI	51	2.3	758	49	1.8	1087	49	1.7	1259	42	1.9	1065	37	1.8	899	46	1.7	1434
SOME ED AFTER HI	56	3.3	339	53	2.7	464	55	2.6	549	46	2.9	483	43	2.8	401	51	2.6	623
GRAD FROM CO	60	2.1	881	58	1.6	1270	56	1.6	1477	46	1.8	1258	43	1.7	1041	53	1.6	1680
FEMALE																		
NOT FINISH HI	51	3.5	328	45	2.7	470	46	2.6	559	35	2.8	486	37	2.7	424	43	2.6	633
FINISH HI	55	2.3	734	48	1.8	1047	49	1.8	1210	39	1.9	1040	36	1.9	871	46	1.8	1390
SOME ED AFTER HI	57	3.5	316	53	2.8	442	54	2.7	528	41	3.0	449	40	2.9	367	50	2.7	592
GRAD FROM CO	61	2.3	746	54	1.8	1050	55	1.7	1240	42	2.0	1049	43	1.8	889	52	1.8	1404
HOW FAR IN SCHOOL DID YOUR FATHER GO BY TYPE OF SCHOOL EXAMINEE ATTENDS **																		
PUBLIC																		
NOT FINISH HI	48	2.5	626	45	2.0	873	46	1.9	1022	37	2.1	899	36	2.0	764	43	1.9	1166
FINISH HI	52	1.7	1389	48	1.3	2002	49	1.3	2300	40	1.4	1967	37	1.4	1637	46	1.3	2638
SOME ED AFTER HI	56	2.5	602	53	2.0	832	54	2.0	985	44	2.2	854	41	2.1	706	50	2.0	1116
GRAD FROM CO	60	1.6	1430	56	1.3	2047	55	1.2	2398	44	1.4	2033	42	1.3	1715	52	1.3	2718
NONPUBLIC																		
NOT FINISH HI	.	.	*	50	10.2	34	45	10.7	36	39	9.9	37	36	9.5	30	47	9.9	45
FINISH HI	60	6.2	103	56	5.2	132	50	4.6	169	43	5.5	138	36	4.6	133	49	4.9	186
SOME ED AFTER HI	58	8.6	53	55	7.1	73	56	6.5	91	47	7.3	78	45	7.4	62	53	6.7	98
GRAD FROM CO	64	4.3	197	59	3.6	273	58	3.4	319	46	3.9	274	50	3.9	215	56	3.5	366

. indictes not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
FATHER EDUCATION COMPARISONS (Z=2.40 FOR 3 TESTS AT .025)						
NOT HI/GR CO	-4.27	-4.78	-4.20	-2.73	-3.03	-4.20
FIN HI/GR CO	-3.54	-4.34	-3.87	-1.94	-3.30	-3.72
SOME ED/GR CO	-1.54	-1.30	-0.45	-0.04	-0.54	-0.89
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.77 FOR 9 TESTS AT .025)						
WHITE						
NOT HI/GR CO	-3.46	-4.05	-3.52	-2.16	-2.59	-3.58
FIN HI/GR CO	-2.37	-3.44	-2.97	-1.42	-2.31	-2.84
SOME ED/GR CO	-1.49	-1.36	-0.61	-0.23	-0.77	-1.09
BLACK						
NOT HI/GR CO	-1.08	-0.62	-0.54	0.186	-0.46	-0.40
FIN HI/GR CO	-1.32	-0.95	-0.82	-0.19	-0.83	-0.74
SOME ED/GR CO	-0.29	-0.22	0.476	0.911	0.447	0.416
HISPANIC						
NOT HI/GR CO	-0.43	-0.98	-1.32	-1.30	-0.35	-1.04
FIN HI/GR CO	-0.78	-0.82	-0.61	-0.12	-0.81	-0.55
SOME ED/GR CO	0.108	0.689	-0.15	-0.39	-0.15	0.055
COMPARISONS BY GENDER OF EXAMINEE (Z=2.64 FOR 6 TESTS AT .025)						
MALE						
NOT HI/GR CO	-3.50	-3.86	-3.00	-1.65	-2.63	-3.00
FIN HI/GR CO	-3.01	-3.60	-2.88	-1.51	-2.30	-2.92
SOME ED/GR CO	-1.00	-1.42	-0.29	0.058	-0.15	-0.64
FEMALE						
NOT HI/GR CO	-2.54	-2.78	-2.86	-2.09	-1.73	-2.90
FIN HI/GR CO	-2.00	-2.45	-2.54	-1.08	-2.47	-2.27
SOME ED/GR CO	-1.02	-0.35	-0.34	-0.08	-0.72	-0.58
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.64 FOR 6 TESTS AT .025)						
PUBLIC						
NOT HI/GR CO	-4.03	-4.51	-3.78	-2.56	-2.39	-3.86
FIN HI/GR CO	-3.46	-4.21	-3.40	-1.85	-2.46	-3.33
SOME ED/GR CO	-1.23	-1.04	-0.21	-0.03	-0.16	-0.63
NONPUBLIC						
NOT HI/GR CO		-0.85	-1.21	-0.63	-1.33	-0.85
FIN HI/GR CO	-0.46	-0.50	-1.44	-0.35	-2.32	-1.06
SOME ED/GR CO	-0.55	-0.49	-0.27	0.132	-0.64	-0.32

TABLE 2.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"HOW FAR IN SCHOOL DID YOUR FATHER GO? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
HOW FAR IN SCHOOL DID YOUR FATHER GO ?																		
NOT FINISH HI	51	2.3	683	52	2.1	724	49	2.3	752	43	2.2	716	41	2.2	772	49	2.3	805
FINISH HI	53	1.7	1292	56	1.5	1427	55	1.6	1459	46	1.6	1386	45	1.6	1491	52	1.7	1568
SOME ED AFTER HI	58	1.9	994	63	1.7	1102	59	1.9	1112	49	1.9	1033	51	1.8	1135	57	1.9	1194
GRAD FROM CO	63	1.3	2005	65	1.2	2182	64	1.3	2246	54	1.3	2136	55	1.2	2305	61	1.3	2423
NOT REPORTED	47	2.8	454	51	2.5	493	47	2.8	498	40	2.7	473	37	2.6	520	46	2.8	544
TOTAL W/IN SUBSCALE	57	0.8	5428	60	0.7	5928	58	0.8	6067	49	0.8	5744	49	0.8	6223	56	0.8	6534
HOW FAR IN SCHOOL DID YOUR FATHER GO BY RACE/ETHNICITY OF EXAMINEE **																		
WHITE																		
NOT FINISH HI	54	3.0	388	55	2.7	419	53	3.0	434	44	2.9	414	45	2.9	444	52	3.0	463
FINISH HI	55	2.0	920	59	1.8	1027	58	1.9	1050	49	1.9	995	47	1.9	1066	55	2.0	1120
SOME ED AFTER HI	60	2.1	765	65	1.9	854	62	2.1	865	51	2.2	796	53	2.0	885	59	2.2	926
GRAD FROM CO	64	1.4	1635	67	1.3	1786	66	1.4	1838	55	1.4	1739	57	1.4	1879	63	1.4	1973
BLACK																		
NOT FINISH HI	41	5.4	122	44	5.0	136	41	5.2	142	42	5.4	128	35	4.9	140	41	5.4	148
FINISH HI	43	4.1	225	42	3.7	238	41	4.0	247	35	3.9	233	35	3.8	254	40	4.0	269
SOME ED AFTER HI	47	5.4	116	52	5.2	123	47	5.6	125	39	5.4	122	39	5.3	129	46	5.7	136
GRAD FROM CO	54	4.2	197	46	3.9	217	47	4.3	221	41	4.1	213	39	3.8	227	48	4.3	242
HISPANIC																		
NOT FINISH HI	45	5.2	140	50	4.8	140	43	5.3	147	37	4.9	142	36	4.9	154	43	5.3	158
FINISH HI	45	5.4	122	48	4.9	135	47	5.6	133	36	5.1	129	37	4.9	141	44	5.5	148
SOME ED AFTER HI	54	6.7	85	49	6.2	88	46	6.3	89	44	6.8	80	45	6.8	85	50	6.8	94
GRAD FROM CO	55	6.5	86	49	6.0	86	52	6.6	91	44	6.3	89	45	6.5	95	51	6.5	102
HOW FAR IN SCHOOL DID YOUR FATHER GO BY GENDER OF EXAMINEE **																		
MALE																		
NOT FINISH HI	52	3.3	334	58	2.9	349	50	3.2	366	47	3.2	354	42	3.1	378	51	3.3	390
FINISH HI	52	2.3	650	59	2.1	718	55	2.3	726	50	2.3	701	47	2.2	752	53	2.3	788
SOME ED AFTER HI	59	2.7	479	67	2.3	540	60	2.6	544	52	2.7	514	54	2.6	558	59	2.7	585
GRAD FROM CO	64	1.7	1059	69	1.6	1143	65	1.7	1182	58	1.8	1127	57	1.7	1209	63	1.8	1276
FEMALE																		
NOT FINISH HI	49	3.2	349	46	2.9	375	48	3.2	386	38	3.1	362	41	3.0	394	46	3.2	415
FINISH HI	54	2.3	642	53	2.1	709	54	2.3	733	42	2.4	685	43	2.2	739	51	2.4	780
SOME ED AFTER HI	58	2.6	515	59	2.4	562	59	2.6	568	46	2.7	519	48	2.5	577	56	2.7	609
GRAD FROM CO	62	1.9	946	61	1.7	1039	63	1.9	1064	49	1.9	1009	53	1.8	1096	58	1.9	1147
HOW FAR IN SCHOOL DID YOUR FATHER GO BY TYPE OF SCHOOL EXAMINEE ATTENDS **																		
PUBLIC																		
NOT FINISH HI	51	2.4	632	52	2.2	668	49	2.4	696	43	2.3	664	41	2.3	715	49	2.4	745
FINISH HI	53	1.7	1182	56	1.6	1310	55	1.7	1335	47	1.7	1265	45	1.7	1365	52	1.7	1436
SOME ED AFTER HI	58	2.0	902	63	1.7	1008	59	1.9	1014	49	2.0	939	51	1.9	1035	58	2.0	1091
GRAD FROM CO	63	1.4	1685	65	1.3	1841	64	1.4	1893	53	1.4	1810	55	1.4	1946	61	1.4	2040
NONPUBLIC																		
NOT FINISH HI	50	8.3	51	47	7.0	56	50	8.3	56	40	8.2	52	47	7.8	57	48	8.4	60
FINISH HI	54	5.7	110	59	5.3	117	56	5.7	124	42	5.7	121	50	5.5	126	53	5.9	132
SOME ED AFTER HI	59	6.3	92	64	5.9	94	59	6.3	98	47	6.2	94	49	6.1	100	57	6.6	103
GRAD FROM CO	65	3.2	320	67	2.9	341	66	3.2	353	56	3.3	326	56	3.2	359	63	3.3	383

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
FATHER EDUCATION COMPARISONS (Z=2.40 FOR 3 TESTS AT .025)						
NOT HI/GR CO	-4.74	-5.62	-5.67	-4.27	-5.43	-4.69
FIN HI/GR CO	-4.03	-4.92	-4.53	-3.64	-5.00	-4.37
SOME ED/GR CO	-2.33	-1.09	-2.08	-2.09	-1.78	-1.60
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.77 FOR 9 TESTS AT .025)						
WHITE						
NOT HI/GR CO	-2.98	-4.14	-3.87	-3.46	-3.81	-3.17
FIN HI/GR CO	-3.60	-3.86	-3.44	-2.68	-3.96	-3.25
SOME ED/GR CO	-1.63	-0.88	-1.62	-1.73	-1.50	-1.23
BLACK						
NOT HI/GR CO	-1.89	-0.36	-0.92	0.014	-0.74	-0.92
FIN HI/GR CO	-1.87	-0.79	-1.04	-1.11	-0.88	-1.20
SOME ED/GR CO	-1.00	0.952	-0.04	-0.38	-0.04	-0.19
HISPANIC						
NOT HI/GR CO	-1.22	0.156	-1.09	-0.91	-1.06	-0.89
FIN HI/GR CO	-1.23	-0.07	-0.56	-0.97	-0.98	-0.77
SOME ED/GR CO	-0.10	0.104	-0.66	-0.02	0	-0.10
COMPARISONS BY GENDER OF EXAMINEE (Z=2.64 FOR 6 TESTS AT .025)						
MALE						
NOT HI/GR CO	-3.22	-3.10	-3.92	-3.01	-4.16	-3.30
FIN HI/GR CO	-4.15	-3.92	-3.40	-2.90	-3.64	-3.53
SOME ED/GR CO	-1.70	-0.72	-1.55	-1.91	-0.91	-1.24
FEMALE						
NOT HI/GR CO	-3.41	-4.50	-4.02	-2.83	-3.40	-3.19
FIN HI/GR CO	-2.72	-2.90	-2.91	-2.03	-3.29	-2.53
SOME ED/GR CO	-1.35	-0.57	-1.30	-0.81	-1.41	-0.87
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.64 FOR 6 TESTS AT .025)						
PUBLIC						
NOT HI/GR CO	-4.28	-4.91	-5.28	-3.80	-5.34	-4.31
FIN HI/GR CO	-4.44	-4.58	-4.13	-3.02	-4.81	-3.98
SOME ED/GR CO	-1.93	-0.88	-1.80	-1.72	-1.47	-1.30
NONPUBLIC						
NOT HI/GR CO	-0.93	-2.64	-1.80	-1.72	-1.07	-1.66
FIN HI/GR CO	-1.73	-1.44	-1.46	-2.07	-1.00	-1.51
SOME ED/GR CO	-0.93	-0.47	-0.94	-1.20	-1.07	-0.82

TABLE 3.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"HOW MANY PARENTS LIVE AT HOME?"

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
HOW MANY PARENTS LIVE AT HOME ?																		
2 PARENTS	56	1.0	4011	52	0.8	5582	53	0.8	6559	43	0.8	5610	40	0.8	4746	49	0.8	7448
1 PARENT	52	1.8	1138	47	1.4	1667	48	1.4	1916	40	1.6	1637	36	1.5	1331	45	1.4	2175
NEITHER	48	4.7	168	45	3.6	239	42	3.7	269	33	4.0	224	31	4.0	186	41	3.7	304
NOT REPORTED	44	2.3	691	40	1.8	980	39	1.7	1171	33	1.9	1003	30	1.8	834	38	1.7	1365
TOTAL W/IN SUBSCALE	54	0.8	6008	50	0.6	8468	50	0.6	9915	41	0.7	8474	38	0.7	7097	47	0.6	11292
HOW MANY PARENTS LIVE AT HOME BY RACE/ETHNICITY OF EXAMINEE **																		
WHITE																		
2 PARENTS	59	1.2	2811	54	0.9	3894	55	0.9	4562	44	1.0	3926	42	1.0	3285	52	0.9	5199
1 PARENT	57	2.6	575	51	2.0	832	52	2.0	944	44	2.3	809	39	2.2	654	49	2.0	1080
NEITHER	55	8.9	51	46	6.3	80	46	6.4	96	39	7.1	73	37	6.9	65	47	6.2	110
BLACK																		
2 PARENTS	45	2.7	563	42	2.0	812	42	2.0	981	36	2.1	819	32	2.0	726	39	2.0	1089
1 PARENT	44	3.3	360	40	2.4	550	40	2.4	632	33	2.6	540	30	2.6	432	38	2.4	719
NEITHER	39	7.2	70	45	5.9	88	37	6.0	102	27	6.0	90	28	6.3	76	35	6.0	112
HISPANIC																		
2 PARENTS	45	2.7	531	43	2.1	740	45	2.1	849	38	2.3	719	32	2.2	610	41	2.1	973
1 PARENT	42	4.8	173	41	3.8	239	42	3.7	284	34	3.9	247	32	3.6	210	39	3.7	318
NEITHER	35	9.4	38	41	7.4	56	37	8.0	55	31	8.6	47	19	7.0	36	33	7.8	64
HOW MANY PARENTS LIVE AT HOME BY GENDER OF EXAMINEE **																		
MALE																		
2 PARENTS	56	1.4	1993	54	1.1	2723	55	1.1	3169	45	1.2	2739	42	1.2	2316	51	1.1	3630
1 PARENT	51	2.7	542	46	2.0	816	48	2.0	936	43	2.2	802	37	2.2	659	45	2.0	1052
NEITHER	48	6.5	87	47	4.7	134	42	5.0	148	35	5.5	113	34	5.4	102	43	5.0	165
FEMALE																		
2 PARENTS	57	1.4	2018	50	1.1	2859	51	1.1	3390	40	1.2	2871	39	1.1	2430	48	1.1	3818
1 PARENT	52	2.6	596	48	2.0	851	48	2.0	980	38	2.2	835	35	2.1	672	45	2.0	1123
NEITHER	48	6.9	81	43	5.6	105	44	5.5	121	32	5.6	111	28	5.9	84	39	5.5	139
HOW MANY PARENTS LIVE AT HOME BY TYPE OF SCHOOL EXAMINEE ATTENDS **																		
PUBLIC																		
2 PARENTS	56	1.0	3644	52	0.8	5080	53	0.8	5955	42	0.9	5102	40	0.8	4319	49	0.8	6768
1 PARENT	51	1.9	1068	47	1.5	1576	47	1.5	1805	40	1.6	1543	35	1.5	1253	44	1.5	2054
NEITHER	45	4.9	158	44	3.7	228	43	3.8	255	33	4.0	213	30	4.0	174	40	3.8	286
NONPUBLIC																		
2 PARENTS	61	3.2	367	58	2.7	502	56	2.5	603	45	2.8	507	44	2.7	426	53	2.6	679
1 PARENT	58	7.6	70	50	6.4	91	52	5.9	110	44	6.7	93	46	6.8	77	50	6.1	120
NEITHER	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFFERENCE BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
PARENTS LIVE AT HOME COMPARISONS (Z=2.40 FOR 3 TESTS AT .025)						
2 PARENTS/NEITHER	1.76	1.98	2.78	2.28	2.19	2.15
2 PARENTS/1 PARENT	2.35	3.20	3.18	1.30	2.52	2.86
1 PARENT/NEITHER	0.71	0.54	1.36	1.62	0.79	0.89
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.78 FOR 9 TESTS AT .025)						
WHITE						
2 PARENTS/NEITHER	0.38	1.30	1.37	0.67	0.79	0.71
2PARENTS/1 PARENT	0.67	1.42	1.26	-0.24	1.17	1.17
1 PARENT/NEITHER	0.16	0.77	0.90	0.72	0.37	0.29
BLACK						
2 PARENTS/NEITHER	0.79	-0.49	-0.93	1.30	0.66	-0.66
2PARENTS/1 PARENT	0.40	0.53	0.71	0.68	0.76	0.45
1 PARENT/NEITHER	0.55	-0.75	0.44	0.92	0.28	0.39
HISPANIC						
2 PARENTS/NEITHER	1.00	0.21	0.92	0.73	1.75	0.95
2PARENTS/1 PARENT	0.51	0.28	0.56	0.82	-0.17	0.47
1 PARENT/NEITHER	0.66	0.05	0.60	0.30	1.72	0.66
COMPARISONS BY GENDER OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
MALE						
2 PARENTS/NEITHER	1.23	1.60	2.04	1.84	1.33	1.89
2PARENTS/1 PARENT	1.73	3.41	2.88	1.14	2.01	2.43
1 PARENT/NEITHER	0.41	-0.02	1.19	1.26	0.42	0.39
FEMALE						
2 PARENTS/NEITHER	1.27	1.24	1.41	1.37	1.80	1.60
2PARENTS/1 PARENT	1.62	1.14	1.70	0.61	1.51	1.51
1 PARENT/NEITHER	0.58	0.75	0.70	1.06	1.16	0.95
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
2 PARENTS/NEITHER	2.09	2.08	-1.42	2.23	2.25	-1.64
2PARENTS/1 PARENT	2.22	2.81	3.08	1.26	2.68	2.65
1 PARENT/NEITHER	1.08	0.80	1.18	1.59	1.06	1.03
NONPUBLIC						
2 PARENTS/NEITHER	*	*	*	*	*	*
2PARENTS/1 PARENT	0.36	1.08	0.66	0.21	-0.34	0.54
1 PARENT/NEITHER	*	*	*	*	*	*

* indicates not applicalbe.

TABLE 3.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"HOW MANY PARENTS LIVE AT HOME?"

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
HOW MANY PARENTS LIVE AT HOME ?																		
2 PARENTS	60	1.0	3771	62	0.8	4142	61	0.9	4243	51	1.0	3990	52	0.9	4332	58	1.0	4555
1 PARENT	54	1.9	939	57	1.7	998	53	1.9	1023	46	1.9	976	45	1.9	1050	52	2.0	1101
NEITHER	50	5.1	134	53	4.7	150	50	5.1	148	44	4.9	149	44	4.8	161	49	5.1	165
NOT REPORTED	48	2.5	583	49	2.3	638	48	2.5	652	41	2.4	628	38	2.3	679	46	2.5	712
TOTAL W/IN SUBSCALE	57	0.8	5427	60	0.7	5928	58	0.8	6066	49	0.8	5743	49	0.8	6222	56	0.8	6533
HOW MANY PARENTS LIVE AT HOME BY RACE/ETHNICITY OF EXAMINEE **																		
WHITE																		
2 PARENTS	61	1.1	2939	64	1.0	3241	63	1.1	3322	53	1.1	3115	54	1.0	3389	60	1.1	3560
1 PARENT	57	2.4	583	62	2.2	627	58	2.4	644	48	2.4	620	49	2.4	662	56	2.5	688
NEITHER	55	7.4	67	60	6.9	73	60	7.1	75	44	6.7	78	50	6.9	80	56	7.2	82
BLACK																		
2 PARENTS	49	3.2	360	47	2.9	403	47	3.1	415	40	3.0	394	39	2.9	420	46	3.1	447
1 PARENT	44	3.9	240	46	3.6	247	42	3.9	253	37	3.9	236	34	3.6	255	41	4.0	274
NEITHER	46	10.1	35	44	9.0	43	38	9.9	40	40	10.3	37	36	8.8	42	41	9.9	44
HISPANIC																		
2 PARENTS	49	3.4	323	51	3.1	342	50	3.4	348	40	3.3	327	40	3.2	354	48	3.5	372
1 PARENT	50	6.0	97	51	5.5	102	45	6.3	105	40	6.0	98	42	5.8	110	46	6.1	116
NEITHER	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
HOW MANY PARENTS LIVE AT HOME BY GENDER OF EXAMINEE **																		
MALE																		
2 PARENTS	61	1.4	1892	67	1.3	2079	62	1.3	2129	56	1.4	2015	54	1.2	2169	61	1.4	2282
1 PARENT	54	2.9	448	61	2.7	471	54	2.8	477	48	2.9	475	47	2.5	504	54	2.9	525
NEITHER	45	7.0	75	54	6.1	80	49	6.7	81	45	6.6	79	45	5.8	86	49	6.9	88
FEMALE																		
2 PARENTS	58	1.4	1879	58	1.3	2063	59	1.3	2114	46	1.4	1975	49	1.2	2163	55	1.4	2273
1 PARENT	54	2.8	491	54	2.5	527	53	2.6	546	43	2.8	501	43	2.3	546	50	2.8	576
NEITHER	56	8.1	59	52	6.8	70	50	7.4	67	42	7.1	70	44	6.3	75	50	7.3	77
HOW MANY PARENTS LIVE AT HOME BY TYPE OF SCHOOL EXAMINEE ATTENDS **																		
PUBLIC																		
2 PARENTS	59	1.1	3304	62	1.0	3653	61	1.0	3735	51	1.1	3510	51	0.9	3816	58	1.0	4011
1 PARENT	54	2.1	854	58	1.9	914	53	2.0	934	46	2.1	891	45	1.8	958	52	2.1	1003
NEITHER	50	5.6	120	51	4.8	133	46	5.3	131	42	5.1	133	44	4.4	144	48	5.3	147
NONPUBLIC																		
2 PARENTS	62	2.8	467	65	2.7	489	63	2.7	508	51	2.9	480	54	2.4	516	60	2.9	544
1 PARENT	57	6.9	85	53	6.7	84	55	6.5	89	46	7.0	85	49	6.2	92	54	6.8	98
NEITHER	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*

- indicates not applicable.
* indicates N<30
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFFERENCE BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
PARENTS LIVE AT HOME COMPARISONS (Z=2.40 FOR 3 TESTS AT .025)						
2 PARENTS/NEITHER	1.94	1.95	2.13	1.44	1.49	1.70
2 PARENTS/1 PARENT	2.66	2.69	3.56	2.52	3.14	2.72
1 PARENT/NEITHER	0.79	0.83	0.61	0.34	0.12	0.51
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.78 FOR 9 TESTS AT .025)						
WHITE						
2 PARENTS/NEITHE	0.82	0.67	0.38	1.22	0.51	0.56
2PARENTS/1 PAREN	1.36	1.14	1.92	1.59	1.82	1.36
1 PARENT/NEITHER	0.32	0.28	-0.32	0.57	-0.15	0.05
BLACK						
2 PARENTS/NEITHE	0.26	0.25	-0.63	-0.06	0.36	-0.49
2PARENTS/1 PAREN	0.98	0.22	1.00	0.51	1.06	0.81
1 PARENT/NEITHER	-0.20	0.14	0.37	-0.28	-0.17	0.02
HISPANIC						
2 PARENTS/NEITHER						
2PARENTS/1 PAREN	-0.06	-0.03	0.60	0.09	-0.24	0.30
1 PARENT/NEITHER	8.33	9.33	7.23	6.60	7.25	7.48
COMPARISONS BY GENDER OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
MALE						
2 PARENTS/NEITHE	2.28	2.02	1.59	1.64	1.50	2.81
2PARENTS/1 PAREN	2.12	2.03	2.73	2.32	2.41	2.14
1 PARENT/NEITHER	1.23	1.00	0.59	0.50	0.36	0.71
FEMALE						
2 PARENTS/NEITHE	0.22	0.92	1.20	0.47	0.89	0.71
2PARENTS/1 PAREN	1.39	1.47	2.23	0.93	2.32	1.59
1 PARENT/NEITHER	-0.30	0.30	0.31	0.07	-0.06	0.05
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
2 PARENTS/NEITHE	1.57	2.18	-0.76	1.77	1.72	-0.66
2PARENTS/1 PAREN	2.35	2.05	3.37	2.29	3.29	2.58
1 PARENT/NEITHER	0.57	1.23	1.15	0.69	0.27	0.75
NONPUBLIC						
2 PARENTS/NEITHE	*	*	*	*	*	*
2PARENTS/1 PAREN	0.78	1.70	1.12	0.75	0.78	0.83
1 PARENT/NEITHER	*	*	*	*	*	*
PUB/NPUB						

* indicates not applicable.

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TABLE 4.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"HOW MUCH T.V. DO YOU WATCH EACH DAY ?"

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
TV WATCH EACH DAY																		
0 - 2 HOURS	57	1.7	1260	52	1.4	1770	53	1.4	2045	43	1.5	1746	40	1.5	1413	50	1.4	2343
3 - 5 HOURS	56	1.1	3092	51	0.9	4378	52	0.9	5114	42	1.0	4382	40	0.9	3675	49	0.9	5833
6 OR MORE	47	1.6	1569	44	1.2	2210	45	1.2	2622	38	1.3	2236	34	1.2	1907	42	1.2	2967
NOT REPORTED	42	5.7	87	45	5.1	110	38	4.7	134	30	5.1	110	28	4.9	102	36	4.8	149
TOTAL W/IN SUBSCALE	54	0.8	6008	50	0.6	8468	50	0.6	9915	41	0.7	8474	38	0.7	7097	47	0.6	11292
TV WATCH EACH DAY BY RACE/ETHNICITY OF EXAMINEE **																		
WHITE																		
0 - 2 HOURS	60	2.0	903	55	1.6	1246	56	1.6	1443	45	1.8	1236	42	1.7	1005	53	1.6	1655
3 - 5 HOURS	59	1.4	2055	54	1.1	2888	55	1.1	3365	43	1.2	2895	42	1.1	2414	51	1.1	3851
6 OR MORE	52	2.3	712	48	1.8	1003	49	1.8	1181	41	2.0	1004	38	1.9	851	46	1.8	1340
BLACK																		
0 - 2 HOURS	40	5.7	115	36	4.2	184	38	4.2	210	32	4.5	172	33	4.6	142	36	4.1	240
3 - 5 HOURS	46	2.8	511	43	2.1	765	43	2.1	899	35	2.2	760	32	2.1	647	40	2.1	1009
6 OR MORE	40	2.7	542	39	2.1	767	38	2.0	923	32	2.1	793	29	2.0	677	36	2.0	1045
HISPANIC																		
0 - 2 HOURS	44	4.5	187	40	3.4	265	44	3.5	308	33	3.5	266	29	3.5	213	39	3.4	356
3 - 5 HOURS	45	3.0	448	42	2.4	619	43	2.3	720	37	2.5	611	31	2.4	521	40	2.3	825
6 OR MORE	37	3.6	282	38	2.9	391	40	2.9	451	34	3.1	388	28	2.9	330	36	2.8	511
TV WATCH EACH DAY BY GENDER OF EXAMINEE **																		
MALE																		
0 - 2 HOURS	57	2.4	642	53	1.9	916	54	1.9	1024	45	2.1	904	42	2.1	708	51	1.9	1194
3 - 5 HOURS	56	1.6	1558	52	1.2	2181	53	1.2	2549	44	1.4	2194	41	1.3	1858	50	1.2	2908
6 OR MORE	46	2.2	816	46	1.7	1139	45	1.7	1341	40	1.9	1134	34	1.7	973	42	1.7	1525
FEMALE																		
0 - 2 HOURS	58	2.5	618	51	2.0	854	52	1.9	1021	40	2.2	842	39	2.1	705	49	1.9	1149
3 - 5 HOURS	57	1.6	1534	51	1.3	2197	51	1.2	2565	39	1.3	2188	38	1.3	1817	48	1.2	2925
6 OR MORE	48	2.3	753	43	1.8	1071	44	1.7	1281	35	1.8	1102	34	1.8	934	41	1.7	1442
TV WATCH EACH DAY BY TYPE OF SCHOOL EXAMINEE ATTENDS **																		
PUBLIC																		
0 - 2 HOURS	56	1.8	1120	51	1.4	1589	53	1.4	1838	42	1.6	1569	40	1.5	1268	49	1.4	2108
3 - 5 HOURS	56	1.2	2840	51	0.9	4023	51	0.9	4685	41	1.0	4021	39	1.0	3375	48	0.9	5346
6 OR MORE	46	1.6	1482	44	1.3	2099	44	1.2	2480	38	1.3	2111	33	1.3	1795	41	1.2	2809
NONPUBLIC																		
0 - 2 HOURS	65	5.1	140	58	4.5	181	57	4.2	207	49	4.8	177	46	4.7	145	56	4.3	235
3 - 5 HOURS	59	4.0	252	58	3.1	354	55	3.0	426	43	3.4	359	43	3.3	298	52	3.0	484
6 OR MORE	56	6.6	87	48	5.9	111	49	5.3	142	43	5.7	125	43	5.3	112	47	5.3	158

** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
T.V. WATCH COMPARISONS (Z=2.24 FOR 2 TESTS AT .025)						
0-2H/6 OR MORE	4.409	4.381	4.700	2.460	3.282	4.543
3-5H/6 OR MORE	4.876	4.681	4.734	2.224	1.552	4.733
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.64 FOR 6 TESTS AT .025)						
WHITE						
0-2H/6 OR MORE	2.637	2.988	2.938	1.523	1.747	2.972
3-5H/6 OR MORE	2.690	2.705	2.636	0.864	1.722	2.575
BLACK						
0-2H/6 OR MORE	-0.07	-0.59	-0.02	-0.04	0.836	-0.02
3-5H/6 OR MORE	1.611	1.394	1.532	0.910	0.983	1.436
HISPANIC						
0-2H/6 OR MORE	1.197	0.312	0.977	-0.23	0.131	0.680
3-5H/6 OR MORE	1.815	0.985	0.783	0.680	0.773	1.234
COMPARISONS BY GENDER OF EXAMINEE (Z=2.50 FOR 4 TESTS AT .025)						
MALE						
0-2H/6 OR MORE	3.339	2.935	3.542	1.822	2.747	3.461
3-5H/6 OR MORE	3.750	3.013	3.563	1.651	3.044	3.626
FEMALE						
0-2H/6 OR MORE	2.840	3.211	3.106	1.659	1.828	2.968
3-5H/6 OR MORE	3.079	3.691	3.182	1.582	1.956	3.025
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.50 FOR 4 TESTS AT .025)						
PUBLIC						
0-2H/6 OR MORE	3.959	3.864	4.396	2.170	3.100	4.096
3-5H/6 OR MORE	4.868	4.299	4.582	2.333	3.575	4.587
NONPUBLIC						
0-2H/6 OR MORE	1.052	1.319	1.176	0.727	0.412	1.232
3-5H/6 OR MORE	0.452	1.418	1.011	-0.07	0.112	0.768

TABLE 4.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"HOW MUCH T.V. DO YOU WATCH EACH DAY ?"

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
TV WATCH EACH DAY **																		
0 - 2 HOURS	61	1.1	2598	64	1.0	2864	62	1.1	2922	52	1.1	2778	53	1.1	3016	59	1.2	3145
3 - 5 HOURS	55	1.2	2348	57	1.1	2531	55	1.2	2599	46	1.2	2466	46	1.2	2655	53	1.3	2803
6 OR MORE	47	2.8	478	49	2.4	530	48	2.7	543	43	2.7	496	41	2.6	548	47	2.7	582
NOT REPORTED	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
TOTAL W/IN SUBSCALE	57	0.8	5428	60	0.7	5928	58	0.8	6067	49	0.8	5744	49	0.8	6223	56	0.8	6534
TV WATCH EACH DAY BY RACE/ETHNICITY OF EXAMINEE **																		
WHITE																		
0 - 2 HOURS	62	1.3	2113	66	1.1	2344	64	1.2	2395	54	1.3	2274	55	1.2	2468	61	1.3	2571
3 - 5 HOURS	58	1.5	1566	61	1.4	1697	59	1.5	1751	48	1.5	1635	49	1.5	1765	56	1.5	1872
6 OR MORE	50	4.1	226	54	3.5	250	51	3.9	257	45	4.0	242	44	3.7	263	50	4.0	272
BLACK																		
0 - 2 HOURS	48	4.1	192	47	3.8	210	43	4.2	212	39	4.3	200	38	3.9	213	45	4.3	226
3 - 5 HOURS	46	3.0	415	46	2.8	452	45	2.9	460	39	2.8	451	37	2.7	482	44	3.0	507
6 OR MORE	44	4.6	181	41	4.1	195	41	4.4	202	39	4.4	176	33	4.2	199	40	4.5	217
HISPANIC																		
0 - 2 HOURS	51	4.3	191	54	4.0	206	48	4.2	210	41	4.2	200	42	4.0	220	47	4.4	230
3 - 5 HOURS	46	3.7	283	47	3.3	289	46	3.7	295	39	3.5	285	37	3.5	308	45	3.7	319
6 OR MORE	47	8.0	55	41	6.9	66	43	8.0	66	33	7.4	59	40	7.6	66	42	7.7	73
TV WATCH EACH DAY BY GENDER OF EXAMINEE **																		
MALE																		
0 - 2 HOURS	62	1.6	1314	67	1.4	1426	63	1.6	1462	57	1.6	1409	55	1.5	1515	62	1.6	1577
3 - 5 HOURS	55	1.7	1190	61	1.5	1297	56	1.7	1327	49	1.7	1268	48	1.6	1356	55	1.7	1434
6 OR MORE	49	3.8	257	55	3.3	285	50	3.6	290	45	3.6	269	43	3.5	296	49	3.7	311
FEMALE																		
0 - 2 HOURS	59	1.6	1284	60	1.5	1438	61	1.6	1460	47	1.7	1369	51	1.5	1501	57	1.7	1568
3 - 5 HOURS	55	1.8	1158	54	1.6	1234	54	1.7	1272	42	1.7	1198	44	1.7	1299	51	1.8	1369
6 OR MORE	46	4.1	221	42	3.6	245	45	4.0	253	40	4.1	227	39	3.8	252	43	4.0	271
TV WATCH EACH DAY BY TYPE OF SCHOOL EXAMINEE ATTENDS **																		
PUBLIC																		
0 - 2 HOURS	60	1.2	2241	64	1.1	2478	62	1.2	2527	52	1.2	2395	53	1.2	2603	59	1.2	2715
3 - 5 HOURS	55	1.3	2129	57	1.2	2308	55	1.3	2363	46	1.3	2256	45	1.2	2426	53	1.3	2554
6 OR MORE	47	2.9	446	48	2.5	500	47	2.8	511	42	2.8	463	40	2.6	514	46	2.8	548
NONPUBLIC																		
0 - 2 HOURS	63	3.1	357	64	2.7	386	63	3.1	395	52	3.0	383	55	2.9	413	60	3.1	430
3 - 5 HOURS	57	4.0	219	62	3.9	223	58	4.1	236	46	4.2	210	48	4.1	229	56	4.2	249
6 OR MORE	49	10.5	32	56	8.6	30	51	11.1	32	54	10.6	33	46	10.5	34	51	11.3	34

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
T.V. WATCH COMPARISONS (Z=2.24 FOR 2 TESTS AT .025)						
0-2H/6 OR MORE	4.414	5.648	4.826	3.335	4.372	4.279
3-5H/6 OR MORE	2.422	3.112	2.581	1.146	1.031	2.193
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.64 FOR 6 TESTS AT .025)						
WHITE						
0-2H/6 OR MORE	2.864	3.302	3.189	2.134	2.766	2.594
3-5H/6 OR MORE	1.820	2.001	1.815	0.659	1.154	1.469
BLACK						
0-2H/6 OR MORE	0.732	1.091	0.195	-0.08	0.752	0.721
3-5H/6 OR MORE	0.421	1.017	0.696	-0.03	0.679	0.632
HISPANIC						
0-2H/6 OR MORE	0.452	1.642	0.476	0.909	0.219	0.575
3-5H/6 OR MORE	-0.03	0.728	0.317	0.699	-0.34	0.291
COMPARISONS BY GENDER OF EXAMINEE (Z=2.50 FOR 4 TESTS AT .025)						
MALE						
0-2H/6 OR MORE	3.236	3.486	3.246	3.225	3.184	3.078
3-5H/6 OR MORE	1.428	1.632	1.595	1.229	1.238	1.408
FEMALE						
0-2H/6 OR MORE	3.050	4.722	3.641	1.565	3.043	3.081
3-5H/6 OR MORE	2.000	2.986	2.120	0.495	1.186	1.814
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.50 FOR 4 TESTS AT .025)						
PUBLIC						
0-2H/6 OR MORE	4.134	5.577	4.687	3.530	4.246	4.188
3-5H/6 OR MORE	2.266	3.023	2.497	1.464	1.678	2.186
NONPUBLIC						
0-2H/6 OR MORE	1.335	0.946	1.069	-0.13	0.870	0.769
3-5H/6 OR MORE	0.782	0.647	0.643	-0.67	0.204	0.365

TABLE 5.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"HOW MUCH TIME EACH DAY IS SPENT ON HOMEWORK ?"

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
HOW MUCH TIME EACH DAY IS SPENT ON HOMEWORK ?																		
NOT USUALLY DO	48	3.6	295	44	2.8	416	45	2.7	491	38	3.0	417	32	2.8	357	42	2.7	557
1/2 H OR LESS	52	1.7	1252	49	1.4	1744	50	1.4	2008	40	1.5	1773	37	1.4	1433	46	1.4	2307
ONE HOUR	56	1.3	2407	51	1.0	3386	51	1.0	4022	42	1.1	3401	39	1.0	2877	48	1.0	4549
TWO HOURS	57	1.9	1063	52	1.5	1586	53	1.4	1816	42	1.6	1528	41	1.6	1265	49	1.4	2077
MORE THAN 2 H	54	2.7	560	49	2.1	753	48	2.0	889	39	2.2	766	37	2.2	659	45	2.1	1014
NOT REPORTED	37	5.3	114	41	4.4	146	34	4.1	175	31	4.6	144	27	4.2	131	35	4.2	195
TOTAL W/IN SUBSCALE	54	0.8	5691	50	0.6	8031	50	0.6	9401	41	0.7	8029	38	0.7	6722	47	0.6	10699
HOW MUCH TIME EACH DAY IS SPENT ON HOMEWORK BY RACE/ETHNICITY OF EXAMINEE **																		
WHITE																		
NOT USUALLY DO	54	4.6	181	50	3.6	257	49	3.6	294	41	3.9	249	36	3.7	218	46	3.6	335
1/2 H OR LESS	56	2.3	743	53	1.8	1026	54	1.8	1185	43	2.0	1038	40	1.9	840	50	1.8	1367
ONE HOUR	59	1.6	1616	53	1.2	2252	54	1.2	2641	43	1.3	2261	42	1.3	1871	51	1.2	2991
TWO HOURS	60	2.4	681	54	1.8	993	55	1.8	1151	44	2.0	971	43	2.0	804	51	1.8	1325
MORE THAN 2 H	59	3.9	252	52	3.0	343	53	3.0	406	42	3.4	347	40	3.2	303	49	3.1	468
BLACK																		
NOT USUALLY DO	37	9.4	44	27	6.4	70	28	6.2	83	31	7.1	67	25	7.0	55	29	6.3	92
1/2 H OR LESS	41	3.6	298	41	2.8	413	39	2.8	486	32	2.8	441	29	2.7	357	36	2.7	549
ONE HOUR	43	3.1	404	38	2.3	601	41	2.3	739	34	2.5	601	32	2.3	544	38	2.2	832
TWO HOURS	48	4.6	189	46	3.3	314	43	3.3	344	36	3.7	283	34	3.6	232	41	3.3	385
MORE THAN 2 H	47	5.0	167	42	3.9	222	41	3.8	267	33	3.9	239	30	3.9	195	39	3.7	309
HISPANIC																		
NOT USUALLY DO	35	7.6	63	29	6.1	77	41	6.1	99	30	5.9	90	21	5.7	75	33	5.9	114
1/2 H OR LESS	41	4.6	184	39	3.5	261	43	3.6	289	36	3.8	254	31	3.7	203	38	3.5	337
ONE HOUR	46	3.4	336	42	2.8	462	43	2.7	549	37	2.9	462	31	2.7	393	40	2.6	626
TWO HOURS	44	4.9	154	41	3.8	231	44	3.8	258	36	4.1	221	32	3.9	187	40	3.8	296
MORE THAN 2 H	45	6.1	109	45	4.7	148	40	4.7	170	32	5.1	138	29	4.6	130	38	4.8	187
HOW MUCH TIME EACH DAY IS SPENT ON HOMEWORK BY GENDER OF EXAMINEE **																		
MALE																		
NOT USUALLY DO	48	4.3	197	45	3.4	286	45	3.4	335	39	3.5	287	33	3.4	249	43	3.3	377
1/2 H OR LESS	52	2.3	715	50	1.8	981	51	1.8	1125	42	2.0	994	38	1.9	806	47	1.8	1285
ONE HOUR	55	1.8	1201	52	1.4	1651	52	1.4	1954	45	1.6	1663	41	1.5	1425	50	1.4	2243
TWO HOURS	56	2.9	467	54	2.2	706	53	2.2	786	45	2.5	662	41	2.4	543	50	2.2	907
MORE THAN 2 H	53	3.9	244	48	3.1	336	49	3.1	391	40	3.3	345	39	3.3	291	46	3.1	444
FEMALE																		
NOT USUALLY DO	48	6.2	98	42	4.9	130	45	4.7	156	36	5.4	130	32	5.0	108	39	4.7	180
1/2 H OR LESS	51	2.7	537	48	2.1	763	48	2.1	883	38	2.2	779	36	2.2	627	45	2.1	1022
ONE HOUR	56	1.8	1206	50	1.4	1735	51	1.4	2068	39	1.5	1738	38	1.4	1452	47	1.4	2306
TWO HOURS	58	2.5	596	50	2.0	880	52	1.9	1030	39	2.1	866	40	2.1	722	48	1.9	1170
MORE THAN 2 H	55	3.6	316	50	2.8	417	48	2.7	498	38	3.0	421	35	2.9	368	45	2.8	570
HOW MUCH TIME EACH DAY IS SPENT ON HOMEWORK BY TYPE OF SCHOOL EXAMINEE ATTENDS **																		
PUBLIC																		
NOT USUALLY DO	47	3.7	281	43	2.8	406	44	2.8	477	38	3.0	405	31	2.8	346	41	2.8	539
1/2 H OR LESS	51	1.8	1180	48	1.4	1647	49	1.4	1895	40	1.5	1672	37	1.5	1350	46	1.4	2181
ONE HOUR	55	1.3	2197	50	1.1	3117	51	1.0	3700	42	1.1	3127	39	1.1	2650	48	1.0	4185
TWO HOURS	56	2.0	938	51	1.5	1403	52	1.5	1595	41	1.7	1343	39	1.7	1110	48	1.5	1830
MORE THAN 2 H	54	2.8	504	49	2.2	679	47	2.2	795	38	2.4	688	35	2.3	588	45	2.2	907
NONPUBLIC																		
NOT USUALLY DO	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
1/2 H OR LESS	59	7.2	72	61	5.9	96	52	5.7	111	44	6.3	100	37	6.0	82	51	5.9	124
ONE HOUR	61	4.3	210	57	3.6	269	56	3.5	321	44	3.9	273	43	3.8	226	53	3.5	363
TWO HOURS	60	5.5	125	56	4.6	183	54	4.1	221	46	4.7	185	47	4.4	155	53	4.2	247
MORE THAN 2 H	58	8.1	56	50	6.8	74	56	6.1	94	44	7.1	78	47	6.8	71	51	6.4	107

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
HOME WORK COMPARISONS (Z=2.50 FOR 4 TESTS AT .025)						
NOT DO/2 +	-1.35	-1.43	-0.99	-0.24	-1.21	-1.13
HALF/ 2 +	-0.75	0.080	0.487	0.445	0.192	0.282
ONE/2 +	0.509	0.737	1.367	1.042	1.083	1.267
TWO/ 2 +	0.827	1.104	1.680	0.976	1.460	1.425
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.94 FOR 12 TESTS AT .025)						
WHITE						
NOT DO/2 +	-0.93	-0.55	-0.85	-0.23	-0.78	-0.70
HALF/ 2 +	-0.73	0.17	0.09	0.23	0.05	0.17
ONE/2 +	-0.12	0.28	0.25	0.27	0.40	0.52
TWO/ 2 +	0.15	0.40	0.60	0.33	0.69	0.59
BLACK						
NOT DO/2 +	-0.92	-1.89	-1.75	-0.30	-0.58	-1.35
HALF/ 2 +	-0.97	-0.17	-0.51	-0.35	-0.15	-0.54
ONE/2 +	-0.66	-0.70	0.02	0.24	0.37	-0.25
TWO/ 2 +	0.13	0.83	0.45	0.56	0.69	0.54
HISPANIC						
NOT DO/2 +	-1.00	-2.03	0.14	-0.28	-1.15	-0.73
HALF/ 2 +	-0.53	-1.06	0.49	0.61	0.20	-0.03
ONE/2 +	0.14	-0.53	0.57	0.77	0.38	0.41
TWO/ 2 +	-0.18	-0.62	0.60	0.61	0.43	0.33
COMPARISONS BY GENDER OF EXAMINEE (Z=2.74 FOR 8 TESTS AT .025)						
MALE						
NOT DO/2 +	-0.73	-0.67	-0.92	-0.21	-1.28	-0.66
HALF/ 2 +	-0.09	0.64	0.39	0.49	-0.05	0.44
ONE/2 +	0.53	1.11	0.92	1.30	0.56	1.15
TWO/ 2 +	0.64	1.50	1.09	1.15	0.67	1.08
FEMALE						
NOT DO/2 +	-1.07	-1.44	-0.53	-0.36	-0.59	-1.15
HALF/ 2 +	-0.98	-0.57	0.17	0.03	0.11	-0.17
ONE/2 +	0.27	-0.03	1.01	0.15	0.87	0.61
TWO/ 2 +	0.57	0.12	1.29	0.35	1.35	0.92
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.74 FOR 8 TESTS AT .025)						
PUBLIC						
NOT DO/2 +	-1.41	-1.49	-0.76	-0.18	-1.13	-1.02
HALF/ 2 +	-0.72	-0.15	0.89	0.57	0.70	0.46
ONE/2 +	0.42	0.46	1.58	1.18	1.43	1.33
TWO/ 2 +	0.81	0.79	1.92	0.92	1.49	1.42
NONPUBLIC						
NOT DO/2 +	*	*	*	*	*	*
HALF/ 2 +	0.06	1.21	-0.50	0.02	-1.07	0.08
ONE/2 +	0.37	0.92	0.00	-0.02	-0.41	0.30
TWO/ 2 +	0.22	0.79	-0.31	0.28	0.09	0.27

* indicates not applicable.

TABLE 5.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"HOW MUCH TIME EACH DAY IS SPENT ON HOMEWORK ?"

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
HOW MUCH TIME EACH DAY IS SPENT ON HOMEWORK ? **																		
NOT USUALLY DO	54	3.0	390	58	2.6	429	56	3.0	434	46	2.9	427	46	2.8	456	53	3.0	474
1/2 H OR LESS	56	2.0	865	61	1.8	936	58	2.0	958	49	2.0	912	48	1.9	979	55	2.0	1026
ONE HOUR	58	1.4	1866	59	1.2	2051	59	1.3	2099	49	1.4	1961	48	1.3	2129	56	1.4	2254
TWO HOURS	58	1.7	1247	61	1.5	1349	59	1.7	1388	50	1.7	1324	51	1.6	1435	57	1.7	1498
MORE THAN 2 H	60	2.0	871	62	1.7	950	59	2.0	963	50	2.0	920	53	1.9	1001	58	2.0	1049
NOT REPORTED	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
TOTAL W/IN SUBSCALE	58	0.8	5241	60	0.7	5717	58	0.8	5844	49	0.8	5547	49	0.8	6003	56	0.8	6304
HOW MUCH TIME EACH DAY IS SPENT ON HOMEWORK BY RACE/ETHNICITY OF EXAMINEE **																		
WHITE																		
NOT USUALLY DO	55	3.4	296	61	2.9	330	58	3.4	333	47	3.3	327	48	3.2	350	55	3.4	364
1/2 H OR LESS	58	2.2	683	63	2.0	734	60	2.2	757	51	2.3	721	50	2.2	767	57	2.3	807
ONE HOUR	60	1.6	1399	62	1.4	1545	62	1.5	1591	51	1.6	1471	51	1.5	1606	59	1.6	1700
TWO HOURS	61	2.0	860	65	1.8	933	63	2.0	959	53	2.0	916	55	1.9	992	60	2.0	1028
MORE THAN 2 H	63	2.5	536	66	2.2	600	63	2.4	606	53	2.5	575	57	2.4	624	61	2.5	654
BLACK																		
NOT USUALLY DO	53	9.8	37	44	8.5	39	48	10.1	40	38	10.0	38	36	9.4	40	44	10.2	42
1/2 H OR LESS	40	6.1	95	44	5.8	99	43	6.1	100	35	6.2	93	33	5.7	104	40	6.3	108
ONE HOUR	45	3.8	253	45	3.5	278	42	3.7	279	37	3.7	268	34	3.4	287	42	3.8	303
TWO HOURS	48	4.1	222	47	3.7	241	44	4.0	250	41	3.9	236	36	3.7	253	44	4.0	273
MORE THAN 2 H	51	4.8	150	47	4.6	164	46	4.9	166	40	4.5	159	43	4.4	174	48	4.9	183
HISPANIC																		
NOT USUALLY DO	46	8.7	49	46	8.5	52	43	9.0	52	38	8.3	52	35	7.7	56	43	8.8	57
1/2 H OR LESS	48	7.8	63	51	6.4	77	51	7.4	75	36	6.5	72	40	7.0	80	47	7.3	83
ONE HOUR	45	4.4	177	46	4.1	186	46	4.6	188	39	4.5	181	36	4.3	192	44	4.6	204
TWO HOURS	52	6.0	108	55	5.3	116	49	6.0	119	37	5.4	112	43	5.5	126	48	5.8	133
MORE THAN 2 H	52	5.7	112	48	5.3	109	45	5.7	115	41	5.6	108	42	5.7	118	47	5.9	123
HOW MUCH TIME EACH DAY IS SPENT ON HOMEWORK BY GENDER OF EXAMINEE **																		
MALE																		
NOT USUALLY DO	54	3.5	289	59	3.0	311	56	3.5	319	49	3.4	316	47	3.3	334	54	3.5	348
1/2 H OR LESS	58	2.5	534	64	2.2	570	59	2.5	587	53	2.5	563	51	2.5	597	58	2.6	626
ONE HOUR	59	1.9	968	64	1.7	1062	60	1.9	1085	53	1.8	1020	50	1.8	1108	58	1.9	1171
TWO HOURS	60	2.5	551	67	2.2	598	61	2.5	620	55	2.5	591	54	2.4	634	60	2.5	664
MORE THAN 2 H	61	3.2	310	63	2.9	346	60	3.2	341	55	3.1	341	55	3.1	368	60	3.2	382
FEMALE																		
NOT USUALLY DO	52	5.7	101	54	5.0	118	54	5.8	115	36	5.4	111	44	5.4	122	49	5.8	126
1/2 H OR LESS	53	3.3	331	55	3.0	366	55	3.2	371	42	3.3	349	43	3.1	382	51	3.3	400
ONE HOUR	57	2.0	898	55	1.8	989	57	2.0	1014	45	2.0	941	46	1.9	1021	53	2.0	1083
TWO HOURS	57	2.2	696	57	2.1	751	58	2.2	768	46	2.2	733	48	2.2	801	54	2.3	834
MORE THAN 2 H	60	2.5	561	61	2.2	604	58	2.5	622	47	2.5	579	52	2.4	633	56	2.5	667
HOW MUCH TIME EACH DAY IS SPENT ON HOMEWORK BY TYPE OF SCHOOL EXAMINEE ATTENDS **																		
PUBLIC																		
NOT USUALLY DO	54	3.1	357	59	2.7	395	56	3.1	400	47	3.1	392	46	2.9	420	53	3.1	436
1/2 H OR LESS	56	2.1	786	60	1.8	856	57	2.1	872	49	2.1	831	48	2.0	892	55	2.1	936
ONE HOUR	57	1.4	1685	59	1.3	1850	58	1.4	1894	49	1.4	1768	48	1.4	1920	56	1.5	2032
TWO HOURS	58	1.8	1096	61	1.6	1200	59	1.8	1233	50	1.8	1179	50	1.7	1279	56	1.8	1333
MORE THAN 2 H	59	2.2	713	60	1.9	780	58	2.2	786	49	2.2	753	52	2.1	819	56	2.2	857
NONPUBLIC																		
NOT USUALLY DO	50	9.9	33	49	7.7	34	55	10.6	34	34	8.9	35	43	10.0	36	49	10.2	38
1/2 H OR LESS	53	6.8	79	66	6.3	80	60	6.7	86	46	6.9	81	50	6.6	87	56	7.0	90
ONE HOUR	61	4.3	181	61	3.9	201	60	4.4	205	51	4.3	193	49	4.3	209	57	4.4	222
TWO HOURS	61	4.8	151	62	4.6	149	62	5.0	155	52	5.1	145	55	4.8	156	59	5.1	165
MORE THAN 2 H	65	4.5	158	67	4.1	170	62	4.5	177	53	4.6	167	58	4.3	182	62	4.6	192

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
HOME WORK COMPARISONS (Z=2.50 FOR 4 TESTS AT .025)						
NOT DO/2 +	-1.77	-1.12	-0.87	-1.17	-2.13	-1.39
HALF/ 2 +	-1.53	-0.40	-0.40	-0.50	-2.03	-0.88
ONE/2 +	-1.08	-1.03	-0.13	-0.46	-2.18	-0.74
TWO/ 2 +	-0.70	-0.04	0.08	-0.08	-0.97	-0.34
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.94 FOR 12 TESTS AT .025)						
WHITE						
NOT DO/2 +	-1.85	-1.46	-1.27	-1.42	-2.11	-1.56
HALF/ 2 +	-1.34	-1.02	-1.06	-0.74	-2.16	-1.14
ONE/2 +	-0.77	-1.39	-0.55	-0.71	-2.09	-0.84
TWO/ 2 +	-0.41	-0.25	-0.03	-0.25	-0.62	-0.22
BLACK						
NOT DO/2 +	0.23	-0.31	0.12	-0.15	-0.75	-0.34
HALF/ 2 +	-1.32	-0.45	-0.46	-0.69	-1.49	-1.02
ONE/2 +	-0.92	-0.45	-0.68	-0.48	-1.61	-0.97
TWO/ 2 +	-0.43	-0.02	-0.29	0.15	-1.26	-0.57
HISPANIC						
NOT DO/2 +	-0.60	-0.19	-0.22	-0.26	-0.71	-0.34
HALF/ 2 +	-0.41	0.30	0.66	-0.58	-0.26	0.10
ONE/2 +	-1.05	-0.37	0.05	-0.18	-0.82	-0.36
TWO/ 2 +	-0.07	0.96	0.42	-0.41	0.18	0.22
COMPARISONS BY GENDER OF EXAMINEE (Z=2.74 FOR 8 TESTS AT .025)						
PUBLIC						
NOT DO/2 +	-1.39	-0.79	-0.78	-1.13	-1.84	-1.34
HALF/ 2 +	-0.83	0.33	-0.17	-0.45	-1.08	-0.55
ONE/2 +	-0.67	0.30	-0.05	-0.47	-1.34	-0.48
TWO/ 2 +	-0.27	1.13	0.17	0.00	-0.31	-0.10
NONPUBLIC						
NOT DO/2 +	-1.26	-1.22	-0.65	-1.92	-1.43	-1.07
HALF/ 2 +	-1.63	-1.57	-0.72	-1.26	-2.36	-1.22
ONE/2 +	-0.97	-2.13	-0.35	-0.71	-2.01	-0.86
TWO/ 2 +	-0.78	-1.26	-0.15	-0.38	-1.18	-0.50
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.74 FOR 8 TESTS AT .025)						
PUBLIC						
NOT DO/2 +	-1.18	-0.36	-0.55	-0.48	-1.56	-0.88
HALF/ 2 +	-0.86	-0.07	-0.13	0.00	-1.54	-0.46
ONE/2 +	-0.61	-0.47	0.19	-0.12	-1.55	-0.26
TWO/ 2 +	-0.28	0.48	0.29	0.18	-0.67	0.00
NONPUBLIC						
NOT DO/2 +	-1.36	-1.96	-0.63	-1.96	-1.36	-1.14
HALF/ 2 +	-1.51	-0.07	-0.29	-0.96	-0.95	-0.68
ONE/2 +	-0.61	-0.90	-0.40	-0.46	-1.46	-0.69
TWO/ 2 +	-0.71	-0.76	-0.08	-0.20	-0.37	-0.38

TABLE 6.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"AT HOME DO YOU TALK ABOUT WHAT YOU LEARNED? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
AT HOME DO YOU TALK ABOUT WHAT YOU LEARNED ?																		
YES	59	1.5	1601	59	1.4	1601	59	1.5	1601	41	1.6	1601	39	1.6	1074	53	1.7	1601
NO	57	2.8	482	55	2.5	482	58	2.8	482	41	2.9	482	39	3.0	309	51	3.0	482
NOT REPORTED	32	7.9	41	43	8.8	41	39	8.6	41	28	8.9	41	35	9.3	26	37	9.5	41
TOTAL W/IN SUBSCALE	58	1.3	2124	58	1.2	2124	58	1.3	2124	41	1.4	2124	39	1.4	1409	52	1.4	2124
AT HOME DO YOU TALK ABOUT WHAT YOU LEARNED BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	64	1.9	971	64	1.8	971	63	2.0	971	43	2.1	971	43	2.2	638	56	2.1	971
NO	60	3.5	296	60	3.2	296	62	3.5	296	44	3.7	296	43	3.9	190	55	3.9	296
BLACK																		
YES	46	3.3	337	45	3.1	337	47	3.4	337	34	3.3	337	29	3.3	233	42	3.6	337
NO	45	6.9	78	40	6.8	78	44	7.2	78	33	6.9	78	27	7.0	51	40	7.4	78
HISPANIC																		
YES	44	4.0	233	46	4.0	233	51	4.1	233	33	4.0	233	26	3.9	165	42	4.4	233
NO	45	6.5	86	43	6.2	86	52	6.8	86	37	6.4	86	28	5.8	56	42	7.1	86
AT HOME DO YOU TALK ABOUT WHAT YOU LEARNED BY GENDER OF EXAMINEE**																		
MALE																		
YES	57	2.1	816	58	2.0	816	59	2.1	816	42	2.2	816	39	2.3	548	52	2.3	816
NO	56	3.8	245	54	3.6	245	59	3.9	245	42	4.0	245	39	4.0	173	51	4.2	245
FEMALE																		
YES	61	2.1	785	59	2.0	785	59	2.2	785	39	2.3	785	40	2.3	526	53	2.4	785
NO	57	4.0	237	56	3.6	237	58	4.0	237	40	4.1	237	37	4.4	136	51	4.4	237
AT HOME DO YOU TALK ABOUT WHAT YOU LEARNED BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	58	1.6	1463	58	1.5	1463	58	1.6	1463	40	1.7	1463	38	1.7	982	52	1.7	1463
NO	55	2.9	445	54	2.7	445	58	2.9	445	41	3.0	445	38	3.0	289	50	3.1	445
NONPUBLIC																		
YES	65	4.9	138	62	5.1	138	63	5.2	138	44	5.5	138	47	5.5	92	57	5.6	138
NO	71	9.4	37	67	8.5	37	64	9.8	37	37	10.4	37	45	12.6	20	58	10.8	37

** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
TALK ABOUT WHAT YOU LEARNED COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	0.798	1.167	0.219	-0.06	0.236	0.464
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	0.896	1.085	0.149	-0.11	0.203	0.430
BLACK						
YES/NO	0.143	0.642	0.362	0.091	0.296	0.218
HISPANIC						
YES/NO	-0.09	0.409	-0.05	-0.44	-0.38	0.035
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	0.321	1.051	0.044	0.108	-0.10	0.188
FEMALE						
YES/NO	0.798	0.602	0.263	-0.19	0.499	0.484
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	1.035	1.508	0.240	-0.35	0.143	0.529
NONPUBLIC						
YES/NO	-0.52	-0.57	-0.04	0.652	0.145	-0.07

TABLE 6.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"AT HOME DO YOU TALK ABOUT WHAT YOU LEARNED? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
AT HOME DO YOU TALK ABOUT WHAT YOU LEARNED ? **																		
YES	62	3.3	297	60	2.3	587	59	2.7	587	52	2.6	587	54	2.5	587	57	2.7	587
NO	53	3.3	322	56	2.2	650	57	2.5	650	47	2.5	650	51	2.4	650	53	2.6	650
NOT REPORTED	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
TOTAL W/IN SUBSCALE	57	2.3	625	58	1.6	1245	58	1.8	1245	49	1.8	1245	52	1.7	1245	55	1.9	1245
AT HOME DO YOU TALK ABOUT WHAT YOU LEARNED BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	64	3.8	221	64	2.6	441	61	3.1	441	54	3.0	441	57	2.9	441	59	3.1	441
NO	56	4.0	222	60	2.6	460	59	3.0	460	50	3.0	460	54	2.9	460	55	3.1	460
BLACK																		
YES	49	10.3	35	38	6.3	80	49	7.3	80	37	7.0	80	43	6.7	80	44	7.4	80
NO	45	7.9	57	40	5.7	95	47	6.8	95	35	6.3	95	39	6.4	95	42	6.9	95
HISPANIC																		
YES	-	-	*	42	8.8	45	50	10.0	45	43	9.3	45	45	9.7	45	46	10.1	45
NO	48	10.6	34	41	6.8	72	49	7.8	72	36	7.4	72	43	7.4	72	44	7.9	72
AT HOME DO YOU TALK ABOUT WHAT YOU LEARNED BY GENDER OF EXAMINEE**																		
MALE																		
YES	63	4.6	146	65	3.1	283	60	3.8	283	59	3.7	283	57	3.6	283	61	3.9	283
NO	53	4.7	163	61	2.9	337	57	3.5	337	50	3.5	337	53	3.4	337	55	3.6	337
FEMALE																		
YES	60	4.8	151	55	3.2	304	58	3.7	304	45	3.7	304	52	3.5	304	53	3.8	304
NO	53	4.7	159	50	3.3	313	56	3.7	313	43	3.7	313	49	3.5	313	51	3.8	313
AT HOME DO YOU TALK ABOUT WHAT YOU LEARNED BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	61	3.6	254	60	2.4	519	59	2.8	519	51	2.8	519	54	2.7	519	57	2.9	519
NO	53	3.5	285	56	2.3	585	56	2.7	585	47	2.7	585	51	2.6	585	53	2.8	585
NONPUBLIC																		
YES	66	8.6	43	59	6.6	68	60	7.9	68	53	7.9	68	56	7.4	68	57	8.1	68
NO	52	9.4	37	59	7.0	65	59	7.8	65	48	8.0	65	53	7.7	65	54	8.3	65

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
TALK ABOUT WHAT YOU LEARNED COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	1.794	1.083	0.625	1.287	0.968	1.057
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	1.535	0.985	0.490	0.975	0.805	0.860
BLACK						
YES/NO	0.376	-0.22	0.210	0.233	0.377	0.246
HISPANIC						
YES/NO	*	0.116	0.023	0.563	0.220	0.194
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	1.490	0.846	0.600	1.663	0.847	1.135
FEMALE						
YES/NO	1.065	0.991	0.342	0.403	0.642	0.498
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	1.508	1.144	0.616	1.192	0.914	0.999
NONPUBLIC						
YES/NO	1.046	-0.06	0.125	0.452	0.271	0.267

* indicates not applicable.

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TABLE 7.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"AT HOME DO YOU GET HELP W/SCIENCE HOMEWORK? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
AT HOME DO YOU GET HELP W/SCIENCE HOMEWORK ? **																		
YES	57	1.7	1174	59	1.7	1174	58	1.8	1174	40	1.9	1174	40	1.9	767	52	1.9	1174
NO	60	2.0	909	57	1.9	909	60	2.0	909	41	2.1	909	39	2.1	617	53	2.2	909
NOT REPORTED	39	7.8	41	42	8.9	41	40	8.8	41	31	9.0	41	-	-	*	38	9.2	41
TOTAL W/IN SUBSCALE	58	1.3	2124	58	1.2	2124	58	1.3	2124	41	1.4	2124	39	1.4	1409	52	1.4	2124
AT HOME DO YOU GET HELP W/SCIENCE HOMEWORK BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	62	2.2	726	64	2.1	726	62	2.3	726	43	2.4	726	44	2.5	467	56	2.5	726
NO	64	2.5	543	61	2.4	543	64	2.6	543	44	2.8	543	43	2.8	364	56	2.8	543
BLACK																		
YES	43	3.9	243	43	3.6	243	45	4.0	243	32	3.9	243	30	4.1	160	40	4.2	243
NO	49	4.8	170	45	4.5	170	47	4.7	170	35	4.7	170	28	4.4	123	43	5.1	170
HISPANIC																		
YES	44	4.8	163	49	4.8	163	52	4.9	163	33	4.8	163	25	4.7	112	43	5.2	163
NO	45	4.8	156	42	4.6	156	52	5.1	156	36	4.8	156	27	4.5	108	42	5.3	156
AT HOME DO YOU GET HELP W/SCIENCE HOMEWORK BY GENDER OF EXAMINEE**																		
MALE																		
YES	55	2.5	561	59	2.4	561	59	2.6	561	42	2.7	561	38	2.8	370	52	2.8	561
NO	58	2.6	500	56	2.5	500	60	2.7	500	42	2.8	500	40	2.9	353	52	2.9	500
FEMALE																		
YES	59	2.4	613	59	2.3	613	58	2.5	613	38	2.6	613	41	2.7	397	52	2.7	613
NO	61	2.9	409	58	2.7	409	60	3.0	409	40	3.2	409	37	3.2	264	53	3.3	409
AT HOME DO YOU GET HELP W/SCIENCE HOMEWORK BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	56	1.8	1082	58	1.7	1082	58	1.9	1082	40	1.9	1082	39	2.0	707	51	2.0	1082
NO	59	2.1	823	56	1.9	823	59	2.1	823	41	2.2	823	38	2.2	563	52	2.3	823
NONPUBLIC																		
YES	66	5.9	92	62	6.2	92	63	6.4	92	42	6.8	92	49	6.9	60	57	7.0	92
NO	65	6.3	86	64	6.0	86	64	6.5	86	43	6.9	86	44	7.4	54	57	7.1	86

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussions.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS -- 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
GET HELP COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	-0.83	0.804	-0.55	-0.50	0.347	-0.27
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	-0.53	0.763	-0.40	-0.41	0.105	-0.21
BLACK						
YES/NO	-0.99	-0.42	-0.35	-0.44	0.331	-0.45
HISPANIC						
YES/NO	-0.04	1.068	-0.02	-0.47	-0.32	0.201
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	-0.85	0.838	-0.29	-0.12	-0.49	-0.19
FEMALE						
YES/NO	-0.47	0.223	-0.48	-0.49	1.081	-0.21
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	-0.87	1.040	-0.45	-0.47	0.199	-0.22
NONPUBLIC						
YES/NO	0.138	-0.23	-0.18	-0.05	0.484	0.010

TABLE 7.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"AT HOME DO YOU GET HELP W/SCIENCE HOMEWORK? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
AT HOME DO YOU GET HELP W/SCIENCE HOMEWORK ? **																		
YES	54	4.7	163	54	3.1	330	55	3.6	330	46	3.5	330	50	3.4	330	52	3.7	330
NO	58	2.7	456	59	1.8	906	59	2.1	906	50	2.1	906	54	2.0	906	56	2.2	906
NOT REPORTED	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
TOTAL W/IN SUBSCALE	57	2.3	625	58	1.6	1245	58	1.8	1245	49	1.8	1245	52	1.7	1245	55	1.9	1245
AT HOME DO YOU GET HELP W/SCIENCE HOMEWORK BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	57	5.7	111	59	3.6	237	57	4.2	237	49	4.2	237	53	4.0	237	55	4.3	237
NO	61	3.1	332	63	2.1	663	60	2.5	663	53	2.5	663	56	2.4	663	58	2.6	663
BLACK																		
YES	41	10.4	33	33	7.4	56	44	8.7	56	34	8.2	56	35	8.2	56	38	8.8	56
NO	50	7.9	59	41	5.2	119	50	6.0	119	37	5.7	119	43	5.6	119	44	6.2	119
HISPANIC																		
YES	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
NO	46	8.7	47	40	6.2	89	50	7.1	89	38	6.7	89	43	6.8	89	44	7.2	89
AT HOME DO YOU GET HELP W/SCIENCE HOMEWORK BY GENDER OF EXAMINEE**																		
MALE																		
YES	54	7.2	65	61	4.6	134	58	5.6	134	53	5.5	134	54	5.3	134	57	5.7	134
NO	59	3.7	244	63	2.4	485	59	2.9	485	54	2.9	485	55	2.8	485	57	3.0	485
FEMALE																		
YES	55	6.2	98	49	4.1	196	54	4.7	196	42	4.6	196	47	4.4	196	49	4.8	196
NO	57	3.9	212	54	2.8	421	58	3.2	421	45	3.2	421	52	3.0	421	53	3.3	421
AT HOME DO YOU GET HELP W/SCIENCE HOMEWORK BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	54	5.0	145	54	3.2	299	55	3.8	299	46	3.7	299	49	3.6	299	52	3.9	299
NO	58	2.9	394	59	1.9	804	59	2.3	804	50	2.3	804	53	2.2	804	56	2.3	804
NONPUBLIC																		
YES	-	-	N<30	54	10.2	31	61	11.5	31	49	12.0	31	55	11.4	31	55	12.1	31
NO	60	7.0	62	61	5.5	102	59	6.3	102	51	6.4	102	54	6.0	102	56	6.6	102

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
GET HELP COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	-0.69	-1.48	-0.76	-0.90	-0.95	-0.81
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	-0.61	-0.99	-0.59	-0.96	-0.68	-0.71
BLACK						
YES/NO	-0.68	-0.95	-0.61	-0.32	-0.85	-0.55
HISPANIC						
YES/NO	*	*	*	*	*	*
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	-0.66	-0.36	-0.17	-0.14	-0.11	-0.12
FEMALE						
YES/NO	-0.33	-0.98	-0.77	-0.59	-0.93	-0.73
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	-0.63	-1.32	-0.88	-0.92	-1.05	-0.86
NONPUBLIC						
YES/NO	-8.59	-0.60	0.182	-0.13	0.139	-0.06

* indicates not applicable.

TABLE 8.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"AT HOME DO YOU GET HELP W/SCIENCE PROJECTS? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
AT HOME DO YOU GET HELP W/SCIENCE PROJECTS ?																		
YES	58	1.7	1293	58	1.6	1293	59	1.7	1293	40	1.8	1293	39	1.8	850	52	1.8	1293
NO	58	2.1	785	58	2.0	785	59	2.2	785	42	2.3	785	40	2.4	528	52	2.4	785
NOT REPORTED	42	7.6	46	44	8.5	46	41	8.1	46	30	8.3	46	34	8.8	31	41	8.9	46
TOTAL W/IN SUBSCALE	58	1.3	2124	58	1.2	2124	58	1.3	2124	41	1.4	2124	39	1.4	1409	52	1.4	2124
AT HOME DO YOU GET HELP W/SCIENCE PROJECTS BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	63	2.1	794	62	2.0	794	62	2.2	794	43	2.3	794	43	2.3	519	56	2.4	794
NO	63	2.7	471	63	2.6	471	64	2.8	471	44	3.0	471	43	3.2	309	56	3.0	471
BLACK																		
YES	46	3.7	266	43	3.6	266	47	3.9	266	33	3.7	266	28	3.8	177	41	4.0	266
NO	45	5.2	146	45	4.6	146	45	5.1	146	34	5.0	146	30	5.1	104	41	5.4	146
HISPANIC																		
YES	44	4.4	186	49	4.4	186	53	4.6	186	33	4.6	186	23	4.3	124	43	4.9	186
NO	44	5.3	133	41	5.1	133	51	5.5	133	36	5.1	133	30	5.1	95	41	5.8	133
AT HOME DO YOU GET HELP W/SCIENCE PROJECTS BY GENDER OF EXAMINEE**																		
MALE																		
YES	57	2.3	645	58	2.2	645	60	2.4	645	42	2.5	645	38	2.5	430	52	2.6	645
NO	57	2.9	415	57	2.8	415	58	3.0	415	42	3.1	415	41	3.3	288	52	3.2	415
FEMALE																		
YES	60	2.4	648	58	2.2	648	58	2.4	648	39	2.5	648	40	2.5	420	52	2.6	648
NO	59	3.1	370	59	2.9	370	59	3.2	370	40	3.3	370	39	3.5	240	53	3.5	370
AT HOME DO YOU GET HELP W/SCIENCE PROJECTS BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	57	1.7	1180	57	1.6	1180	58	1.8	1180	40	1.8	1180	38	1.9	778	51	1.9	1180
NO	57	2.2	722	57	2.1	722	58	2.3	722	41	2.3	722	39	2.5	487	52	2.5	722
NONPUBLIC																		
YES	69	5.3	113	63	5.5	113	65	5.6	113	43	6.1	113	47	5.9	72	58	6.2	113
NO	63	7.4	63	63	7.2	63	61	7.9	63	43	8.1	63	45	9.1	41	56	8.4	63

** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFFERENCE BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
GET HELP COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	0.148	0.157	0.072	-0.48	-0.36	0.00
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	0	-0.12	-0.42	-0.45	-0.02	-0.18
BLACK						
YES/NO	0.062	-0.30	0.391	-0.20	-0.44	-0.05
HISPANIC						
YES/NO	-0.07	1.171	0.376	-0.39	-1.06	0.251
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	-0.13	0.423	0.390	-0.17	-0.65	0.024
FEMALE						
YES/NO	0.281	-0.27	-0.32	-0.43	0.161	-0.06
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	-0.10	0.151	-0.10	-0.50	-0.48	-0.06
NONPUBLIC						
YES/NO	0.666	0.055	0.412	-0.00	0.193	0.191

TABLE 8.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"AT HOME DO YOU GET HELP W/SCIENCE PROJECTS? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
AT HOME DO YOU GET HELP W/SCIENCE PROJECTS ? **																		
YES	59	4.0	224	57	2.7	440	57	3.1	440	49	3.1	440	52	3.0	440	54	3.2	440
NO	57	2.9	394	59	1.9	796	58	2.3	796	49	2.3	796	53	2.2	796	55	2.4	796
NOT REPORTED	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
TOTAL W/IN SUBSCALE	57	2.3	625	58	1.6	1245	58	1.8	1245	49	1.8	1245	52	1.7	1245	55	1.9	1245
AT HOME DO YOU GET HELP W/SCIENCE PROJECTS BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	62	4.8	150	61	3.2	313	59	3.6	313	51	3.7	313	55	3.5	313	56	3.8	313
NO	59	3.3	291	63	2.2	586	60	2.6	586	53	2.7	586	56	2.5	586	58	2.7	586
BLACK																		
YES	47	9.4	42	37	6.4	76	48	7.6	76	38	7.2	76	40	7.2	76	43	7.6	76
NO	46	8.4	51	40	5.6	100	48	6.6	100	34	6.2	100	41	6.0	100	42	6.7	100
HISPANIC																		
YES	-	-	*	44	9.1	41	50	10.3	41	41	9.7	41	40	10.0	41	45	10.5	41
NO	47	10.1	34	40	6.7	76	49	7.7	76	37	7.2	76	46	7.3	76	44	7.8	76
AT HOME DO YOU GET HELP W/SCIENCE PROJECTS BY GENDER OF EXAMINEE**																		
MALE																		
YES	61	5.7	106	64	3.8	206	58	4.5	206	56	4.5	206	53	4.4	206	58	4.6	206
NO	57	4.1	201	62	2.5	412	59	3.1	412	53	3.1	412	56	3.0	412	57	3.2	412
FEMALE																		
YES	56	5.6	118	50	3.8	234	56	4.3	234	43	4.2	234	51	4.0	234	51	4.4	234
NO	57	4.1	193	54	2.9	384	57	3.3	384	45	3.3	384	50	3.2	384	53	3.4	384
AT HOME DO YOU GET HELP W/SCIENCE PROJECTS BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	58	4.3	193	57	2.9	385	57	3.3	385	48	3.2	385	51	3.2	385	54	3.4	385
NO	57	3.1	345	58	2.0	718	58	2.4	718	49	2.4	718	53	2.3	718	55	2.5	718
NONPUBLIC																		
YES	63	10.6	31	55	7.6	55	60	8.7	55	49	9.0	55	55	8.3	55	55	9.1	55
NO	57	7.9	49	62	6.2	78	58	7.2	78	51	7.2	78	54	6.9	78	56	7.5	78

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

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GRADE 11
Z TESTS FOR THE DIFFERENCE BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
GET HELP COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	0.385	-0.57	-0.18	-0.18	-0.27	-0.27
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	0.426	-0.35	-0.24	-0.46	-0.11	-0.27
BLACK						
YES/NO	0.119	-0.35	-0.03	0.454	-0.05	0.049
HISPANIC						
YES/NO	*	0.362	0.062	0.331	-0.41	0.099
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	0.600	0.434	-0.03	0.459	-0.58	0.213
FEMALE						
YES/NO	-0.05	-0.83	-0.18	-0.44	0.293	-0.41
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	0.225	-0.34	-0.29	-0.17	-0.33	-0.26
NONPUBLIC						
YES/NO	0.416	-0.76	0.176	-0.14	0.082	-0.05

* indicates not applicable.

TABLE 9.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"AT HOME DOES SOMEONE SHOW YOU HOW TO DO SCIENCE EXP? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
AT HOME DOES SOMEONE SHOW YOU HOW TO DO SCIENCE EXP. ?																		
YES	55	2.1	778	56	2.1	778	56	2.2	778	40	2.3	778	39	2.3	525	50	2.4	778
NO	60	1.7	1298	59	1.6	1298	60	1.7	1298	41	1.8	1298	40	1.9	852	53	1.8	1298
NOT REPORTED	42	7.4	48	42	8.2	48	42	8.0	48	30	8.3	48	35	8.7	32	40	8.7	48
TOTAL W/IN SUBSCALE	58	1.3	2124	58	1.2	2124	58	1.3	2124	41	1.4	2124	39	1.4	1409	52	1.4	2124
AT HOME DOES SOMEONE SHOW YOU HOW TO DO SCIENCE EXP. BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	61	2.8	461	61	2.6	461	61	2.9	461	43	3.0	461	43	3.0	309	55	3.1	461
NO	64	2.1	806	63	1.9	806	64	2.1	806	43	2.3	806	43	2.4	520	56	2.3	806
BLACK																		
YES	43	4.6	179	42	4.4	179	44	4.8	179	33	4.5	179	29	4.7	118	39	4.9	179
NO	48	4.0	231	46	3.8	231	48	4.1	231	34	4.0	231	28	4.0	162	43	4.3	231
HISPANIC																		
YES	35	5.6	113	44	5.6	113	48	5.9	113	31	5.6	113	21	5.2	78	38	6.2	113
NO	49	4.3	204	46	4.2	204	54	4.4	204	36	4.3	204	29	4.2	140	45	4.7	204
AT HOME DOES SOMEONE SHOW YOU HOW TO DO SCIENCE EXP. BY GENDER OF EXAMINEE**																		
MALE																		
YES	52	2.9	404	55	2.9	404	56	3.1	404	42	3.1	404	35	3.1	274	50	3.3	404
NO	59	2.3	653	59	2.2	653	61	2.4	653	42	2.5	653	41	2.6	444	53	2.6	653
FEMALE																		
YES	58	3.1	374	57	2.9	374	56	3.2	374	37	3.3	374	42	3.3	251	51	3.4	374
NO	61	2.4	645	59	2.2	645	60	2.4	645	40	2.5	645	38	2.6	408	53	2.6	645
AT HOME DOES SOMEONE SHOW YOU HOW TO DO SCIENCE EXP. BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	55	2.2	722	56	2.1	722	57	2.3	722	40	2.3	722	38	2.4	483	50	2.4	722
NO	59	1.7	1179	58	1.6	1179	59	1.8	1179	41	1.8	1179	38	1.9	782	52	1.9	1179
NONPUBLIC																		
YES	60	7.8	56	59	8.0	56	55	8.6	56	40	8.4	56	40	7.7	42	51	9.0	56
NO	69	5.3	119	64	5.2	119	67	5.4	119	44	6.0	119	50	6.6	70	59	6.0	119

** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFFERENCE BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
SCIENCE EXPERIMENT HELP COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	-1.85	-1.28	-1.39	-0.41	-0.34	-0.90
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	-0.83	-0.64	-0.84	-0.08	0	-0.36
BLACK						
YES/NO	-0.88	-0.67	-0.62	-0.14	0.064	-0.50
HISPANIC						
YES/NO	-2.07	-0.35	-0.83	-0.70	-1.23	-0.89
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	-1.84	-1.14	-1.05	0.125	-1.49	-0.84
FEMALE						
YES/NO	-0.74	-0.67	-0.92	-0.75	1.111	-0.41
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	-1.45	-1.04	-0.96	-0.26	0.065	-0.57
NONPUBLIC						
YES/NO	-0.96	-0.56	-1.14	-0.39	-1.05	-0.74

TABLE 9.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"AT HOME DOES SOMEONE SHOW YOU HOW TO DO SCIENCE EXP? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
AT HOME DOES SOMEONE SHOW YOU HOW TO DO SCIENCE EXP. ? **																		
YES	57	6.7	82	55	4.5	148	56	5.3	148	47	5.2	148	50	5.1	148	52	5.4	148
NO	57	2.5	536	58	1.7	1085	58	2.0	1085	49	2.0	1085	53	1.9	1085	55	2.0	1085
NOT REPORTED	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
TOTAL W/IN SUBSCALE	57	2.3	625	58	1.6	1245	58	1.8	1245	49	1.8	1245	52	1.7	1245	55	1.9	1245
AT HOME DOES SOMEONE SHOW YOU HOW TO DO SCIENCE EXP. BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	62	8.1	54	61	5.6	93	59	6.7	93	51	6.7	93	53	6.4	93	56	6.8	93
NO	60	2.9	389	62	1.9	805	60	2.3	805	52	2.3	805	56	2.2	805	57	2.3	805
BLACK																		
YES	-	-	*	36	10.0	32	47	11.6	32	37	11.2	32	40	11.4	32	40	11.8	32
NO	48	6.8	77	39	4.7	142	48	5.5	142	35	5.2	142	41	5.1	142	43	5.6	142
HISPANIC																		
YES	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
NO	49	8.5	50	41	5.8	99	51	6.7	99	39	6.4	99	44	6.4	99	45	6.8	99
AT HOME DOES SOMEONE SHOW YOU HOW TO DO SCIENCE EXP. BY GENDER OF EXAMINEE**																		
MALE																		
YES	61	10.6	33	63	6.5	66	62	7.7	66	55	7.9	66	51	7.6	66	58	8.0	66
NO	57	3.5	275	63	2.2	552	58	2.7	552	54	2.7	552	55	2.6	552	57	2.8	552
FEMALE																		
YES	55	8.6	49	48	6.3	82	52	7.2	82	40	6.9	82	50	6.9	82	47	7.4	82
NO	57	3.6	261	53	2.5	533	58	2.8	533	45	2.8	533	50	2.7	533	53	2.9	533
AT HOME DOES SOMEONE SHOW YOU HOW TO DO SCIENCE EXP. BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	56	7.1	72	55	4.7	134	55	5.5	134	46	5.4	134	49	5.4	134	51	5.7	134
NO	57	2.7	466	58	1.8	966	58	2.1	966	49	2.1	966	53	2.0	966	55	2.1	966
NONPUBLIC																		
YES	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
NO	58	6.7	70	59	5.1	119	59	5.9	119	50	5.9	119	54	5.6	119	55	6.1	119

- indicates N<30.
* indicates not applicable.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFFERENCE BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
SCIENCE EXPERIMENT HELP COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	0.028	-0.74	-0.26	-0.41	-0.47	-0.46
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	0.303	-0.26	-0.07	-0.15	-0.45	-0.19
BLACK						
YES/NO	*	-0.29	-0.13	0.105	-0.11	-0.20
HISPANIC						
YES/NO	*	*	*	*	*	*
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	0.332	-0.01	0.523	0.226	-0.53	0.164
FEMALE						
YES/NO	-0.26	-0.78	-0.80	-0.60	-0.12	-0.67
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	-0.14	-0.69	-0.38	-0.58	-0.61	-0.55
NONPUBLIC	*	*	*	*	*	*

* indicates not applicable.

TABLE 10.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"AT HOME DO YOU WATCH & DISCUSS SCIENCE PROGRAM? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
AT HOME DO YOU WATCH & DISCUSS SCIENCE PROGRAM ?																		
YES	59	2.7	474	58	2.6	474	59	2.8	474	42	2.9	474	39	2.9	327	53	3.0	474
NO	58	1.5	1602	58	1.4	1602	59	1.5	1602	40	1.6	1602	39	1.6	1052	52	1.7	1602
NOT REPORTED	36	7.3	48	43	8.1	48	39	7.9	48	29	8.1	48	38	9.4	30	38	8.7	48
TOTAL W/IN SUBSCALE	58	1.3	2124	58	1.2	2124	58	1.3	2124	41	1.4	2124	39	1.4	1409	52	1.4	2124
AT HOME DO YOU WATCH & DISCUSS SCIENCE PROGRAM BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	63	3.5	281	62	3.3	281	64	3.5	281	45	3.9	281	42	3.9	189	58	3.9	281
NO	63	1.9	986	63	1.8	986	62	2.0	986	43	2.0	986	43	2.1	641	56	2.1	986
BLACK																		
YES	42	6.4	96	42	6.0	96	41	6.2	96	29	5.9	96	24	5.6	68	37	6.6	96
NO	47	3.4	315	44	3.2	315	48	3.6	315	35	3.5	315	30	3.6	213	42	3.7	315
HISPANIC																		
YES	47	6.6	77	45	6.6	77	51	7.2	77	34	7.1	77	25	6.7	56	43	7.5	77
NO	44	3.9	239	46	3.9	239	52	4.1	239	35	3.9	239	27	3.8	162	43	4.3	239
AT HOME DO YOU WATCH & DISCUSS SCIENCE PROGRAM BY GENDER OF EXAMINEE**																		
MALE																		
YES	56	3.6	265	58	3.4	265	59	3.7	265	42	3.9	265	38	4.0	177	52	4.0	265
NO	57	2.1	790	57	2.0	790	59	2.2	790	42	2.3	790	39	2.3	541	52	2.3	790
FEMALE																		
YES	62	4.0	209	58	3.9	209	60	4.1	209	41	4.5	209	39	4.3	150	54	4.5	209
NO	59	2.1	812	59	2.0	812	58	2.2	812	39	2.2	812	40	2.3	511	52	2.3	812
AT HOME DO YOU WATCH & DISCUSS SCIENCE PROGRAM BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	58	2.8	435	57	2.7	435	59	2.9	435	42	3.0	435	39	3.0	301	53	3.1	435
NO	57	1.6	1465	57	1.5	1465	58	1.6	1465	40	1.7	1465	38	1.7	965	51	1.7	1465
NONPUBLIC																		
YES	67	9.0	39	62	9.2	39	65	9.6	39	40	10.4	39	-	-	*	56	10.6	39
NO	66	4.9	137	63	4.9	137	63	5.2	137	43	5.5	137	49	5.6	87	57	5.7	137

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFFERENCE BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
WATCH & DISCUSS COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	0.16	-0.07	0.16	0.33	-0.24	0.32
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	0.20	-0.05	0.52	0.57	-0.27	0.45
BLACK						
YES/NO	-0.62	-0.35	-0.95	-0.91	-0.88	-0.69
HISPANIC						
YES/NO	0.33	-0.05	-0.17	-0.06	-0.25	0.05
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	-0.19	0.05	-0.16	-0.13	-0.15	0.00
FEMALE						
YES/NO	0.59	-0.16	0.43	0.54	-0.16	0.49
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	0.22	-0.03	0.09	0.46	0.26	0.42
NONPUBLIC						
YES/NO	0.06	-0.08	0.22	-0.28	*	-0.09

* indicates not applicable.

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TABLE 10.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"AT HOME DO YOU WATCH & DISCUSS SCIENCE PROGRAM? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
AT HOME DO YOU WATCH & DISCUSS SCIENCE PROGRAM ? **																		
YES	63	4.5	145	63	3.2	295	58	3.7	295	53	3.7	295	55	3.5	295	58	3.8	295
NO	56	2.7	474	56	1.8	939	57	2.1	939	48	2.1	939	52	2.0	939	54	2.2	939
NOT REPORTED	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
TOTAL W/IN SUBSCALE	57	2.3	625	58	1.6	1245	58	1.8	1245	49	1.8	1245	52	1.7	1245	55	1.9	1245
AT HOME DO YOU WATCH & DISCUSS SCIENCE PROGRAM BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	68	5.3	104	68	3.7	219	61	4.3	219	57	4.3	219	59	4.0	219	61	4.4	219
NO	58	3.2	339	60	2.1	679	59	2.5	679	50	2.5	679	54	2.4	679	56	2.6	679
BLACK																		
YES	-	-	*	38	10.4	31	46	11.7	31	31	11.0	31	34	11.0	31	39	11.9	31
NO	47	6.8	79	39	4.6	144	49	5.5	144	37	5.2	144	42	5.1	144	43	5.6	144
HISPANIC																		
YES	-	-	*	39	9.5	34	46	11.5	34	40	10.6	34	43	11.0	34	43	11.5	34
NO	49	9.6	41	42	6.5	83	51	7.3	83	38	6.9	83	44	7.0	83	45	7.4	83
AT HOME DO YOU WATCH & DISCUSS SCIENCE PROGRAM BY GENDER OF EXAMINEE**																		
MALE																		
YES	67	6.0	80	68	4.2	162	60	5.0	162	58	4.9	162	57	4.7	162	61	5.0	162
NO	55	3.9	229	61	2.5	456	58	3.0	456	52	3.0	456	54	2.9	456	56	3.1	456
FEMALE																		
YES	57	7.0	65	56	4.9	133	56	5.6	133	46	5.6	133	53	5.2	133	53	5.7	133
NO	56	3.8	245	52	2.6	483	57	3.0	483	44	2.9	483	50	2.8	483	52	3.1	483
AT HOME DO YOU WATCH & DISCUSS SCIENCE PROGRAM BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	64	4.9	125	62	3.4	264	58	3.9	264	52	3.9	264	55	3.7	264	57	4.0	264
NO	55	2.9	414	56	1.9	837	57	2.2	837	48	2.2	837	51	2.1	837	54	2.3	837
NONPUBLIC																		
YES	-	-	*	69	9.5	31	63	11.6	31	56	11.6	31	53	10.9	31	60	11.8	31
NO	60	7.5	60	56	5.6	102	58	6.3	102	49	6.4	102	54	6.1	102	54	6.6	102

- indicates N<30.
* indicates not applicable.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFFERENCE BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
WATCH & DISCUSS COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	1.36	1.66	0.23	1.14	0.82	0.87
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	1.63	1.69	0.34	1.29	0.94	0.99
BLACK						
YES/NO	*	-0.11	-0.18	-0.45	-0.65	-0.31
HISPANIC						
YES/NO	*	-0.26	-0.32	0.15	-0.05	-0.12
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	1.69	1.42	0.38	1.05	0.56	0.91
FEMALE						
YES/NO	0.13	0.70	-0.11	0.35	0.51	0.18
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	1.59	1.34	0.13	1.01	0.91	0.76
NONPUBLIC						
YES/NO	*	1.21	0.35	0.57	-0.12	0.44

* indicates not applicable.

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TABLE 11.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"DO YOU GO TO SCIENCE MUSEUM W/SOMEONE FROM HOME ? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
DO YOU GO TO SCIENCE MUSEUM W/SOMEONE FROM HOME ? **																		
YES	63	2.2	680	62	2.1	680	62	2.3	680	43	2.4	680	45	2.6	452	56	2.5	680
NO	56	1.6	1398	56	1.5	1398	57	1.7	1398	40	1.7	1398	36	1.7	928	50	1.8	1398
NOT REPORTED	36	7.4	46	41	8.4	46	40	8.0	46	27	8.3	46	-	-	*	37	8.9	46
TOTAL W/IN SUBSCALE	58	1.3	2124	58	1.2	2124	58	1.3	2124	41	1.4	2124	39	1.4	1409	52	1.4	2124
DO YOU GO TO SCIENCE MUSEUM W/SOMESONE FROM HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	68	2.7	447	67	2.6	447	66	2.8	447	45	3.0	447	49	3.3	290	60	3.1	447
NO	60	2.1	819	60	1.9	819	61	2.2	819	42	2.2	819	40	2.3	539	54	2.3	819
BLACK																		
YES	47	5.6	120	41	5.3	120	45	5.7	120	34	5.6	120	33	5.4	84	41	5.9	120
NO	45	3.6	291	45	3.4	291	47	3.7	291	34	3.6	291	26	3.7	197	41	3.9	291
HISPANIC																		
YES	43	6.6	84	47	6.6	84	55	6.9	84	37	6.9	84	25	6.6	58	45	7.3	84
NO	45	3.9	235	45	3.9	235	50	4.1	235	33	3.9	235	27	3.7	162	42	4.3	235
DO YOU GO TO SCIENCE MUSEUM W/SOMEONE FROM HOME BY GENDER OF EXAMINEE**																		
MALE																		
YES	61	3.0	366	62	3.0	366	63	3.1	366	44	3.3	366	44	3.5	249	56	3.4	366
NO	55	2.3	690	55	2.1	690	57	2.4	690	41	2.4	690	36	2.4	469	50	2.5	690
FEMALE																		
YES	65	3.3	314	62	3.1	314	62	3.4	314	41	3.6	314	46	3.8	203	56	3.7	314
NO	57	2.3	708	57	2.2	708	57	2.3	708	38	2.4	708	36	2.4	459	50	2.5	708
DO YOU GO TO SCIENCE MUSEUM W/SOMEONE BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	62	2.4	602	61	2.3	602	61	2.4	602	43	2.6	602	43	2.8	402	55	2.7	602
NO	55	1.7	1300	56	1.6	1300	57	1.7	1300	39	1.7	1300	36	1.8	865	50	1.8	1300
NONPUBLIC																		
YES	71	6.3	78	67	6.4	78	67	6.5	78	45	7.3	78	54	7.6	50	61	7.4	78
NO	62	6.0	98	59	6.0	98	60	6.4	98	41	6.5	98	38	6.7	63	53	6.8	98

- indicates not applicable.
* indicates N<30.
** Sma'l subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SCIENCE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
GO TO MUSEUM COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	2.617	2.210	1.872	1.110	2.860	1.88
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	2.321	2.059	1.591	0.767	2.249	1.54
BLACK						
YES/NO	0.226	-0.63	-0.26	0	1.087	-0.0
HISPANIC						
YES/NO	-0.23	0.262	0.637	0.493	-0.24	0.37
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	1.661	1.697	1.408	0.808	1.775	1.39
FEMALE						
YES/NO	2.022	1.403	1.215	0.759	2.247	1.28
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	2.124	1.849	1.570	1.023	2.253	1.60
NONPUBLIC						
YES/NO	1.011	0.845	0.785	0.367	1.508	0.73

TABLE 11.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"DO YOU GO TO SCIENCE MUSEUM W/SOMEONE FROM HOME ? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
DO YOU GO TO SCIENCE MUSEUM W/SOMEONE FROM HOME ? **																		
YES	62	4.7	148	63	2.9	319	60	3.6	319	53	3.6	319	57	3.4	319	58	3.7	319
NO	56	2.7	471	56	1.9	917	57	2.1	917	48	2.1	917	51	2.1	917	53	2.2	917
NOT REPORTED	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
TOTAL W/IN SUBSCALE	57	2.3	625	58	1.6	1245	58	1.8	1245	49	1.8	1245	52	1.7	1245	55	1.9	1245
DO YOU GO TO SCIENCE MUSEUM W/SOMESONE FROM HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	64	5.3	114	67	3.2	251	62	4.0	251	55	4.0	251	59	3.8	251	61	4.1	251
NO	58	3.2	329	60	2.2	649	59	2.5	649	51	2.5	649	54	2.4	649	56	2.6	649
BLACK																		
YES	-	-	*	35	10.1	32	48	11.7	32	36	10.8	32	45	10.8	32	43	11.7	32
NO	45	6.8	78	40	4.7	143	48	5.5	143	36	5.2	143	40	5.1	143	43	5.6	143
HISPANIC																		
YES	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
NO	51	8.8	49	43	6.2	93	52	6.9	93	38	6.5	93	45	6.6	93	46	7.0	93
DO YOU GO TO SCIENCE MUSEUM W/SOMEONE FROM HOME BY GENDER OF EXAMINEE**																		
MALE																		
YES	66	6.3	76	67	4.0	167	62	4.9	167	59	4.9	167	59	4.7	167	62	5.0	167
NO	55	3.9	233	61	2.5	452	57	3.0	452	52	3.0	452	53	2.9	452	55	3.1	452
FEMALE																		
YES	58	7.0	72	57	4.2	152	57	5.2	152	47	5.3	152	54	4.9	152	54	5.4	152
NO	56	3.8	238	51	2.8	465	57	3.0	465	43	3.0	465	49	2.9	465	51	3.1	465
DO YOU GO TO SCIENCE MUSEUM W/SOMEONE BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	62	5.0	129	63	3.1	280	60	3.8	280	54	3.8	280	57	3.6	280	58	3.9	280
NO	55	2.9	410	56	2.0	823	57	2.3	823	47	2.2	823	51	2.2	823	53	2.3	823
NONPUBLIC																		
YES	-	-	*	60	9.2	39	61	10.1	39	49	10.4	39	53	9.7	39	56	10.7	39
NO	58	7.1	61	59	5.7	94	59	6.6	94	51	6.7	94	55	6.4	94	56	6.9	94

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical note

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

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GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SCIENCE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
GO TO MUSEUM COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	1.222	1.881	0.6711	1.397	1.442	1.144
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	0.875	1.861	0.5889	0.982	1.156	0.982
BLACK						
YES/NO	*	-0.37	-0.007	0	0.468	0.023
HISPANIC						
YES/NO	*	*	*	*	*	*
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	1.491	1.247	0.7966	1.243	1.031	1.101
FEMALE						
YES/NO	0.151	1.229	0.0993	0.578	0.955	0.465
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	1.216	1.976	0.6299	1.519	1.593	1.187
NONPUBLIC						
YES/NO	*	0.120	0.2308	-0.15	-0.16	0.062

* indicates not applicable.

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TABLE 11.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"DO YOU GO TO SCIENCE MUSEUM W/SOMEONE FROM HOME ? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
DO YOU GO TO SCIENCE MUSEUM W/SOMEONE FROM HOME ? **																		
YES	63	2.2	680	62	2.1	680	62	2.3	680	43	2.4	680	45	2.6	452	56	2.5	680
NO	56	1.6	1398	56	1.5	1398	57	1.7	1398	40	1.7	1398	36	1.7	928	50	1.8	1398
NOT REPORTED	36	7.4	46	41	8.4	46	40	8.0	46	27	8.3	46	-	-	*	37	8.9	46
TOTAL W/IN SUBSCALE	58	1.3	2124	58	1.2	2124	58	1.3	2124	41	1.4	2124	39	1.4	1409	52	1.4	2124
DO YOU GO TO SCIENCE MUSEUM W/SOMESONE FROM HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	68	2.7	447	67	2.6	447	66	2.8	447	45	3.0	447	49	3.3	290	60	3.1	447
NO	60	2.1	819	60	1.9	819	61	2.2	819	42	2.2	819	40	2.3	539	54	2.3	819
BLACK																		
YES	47	5.6	120	41	5.3	120	45	5.7	120	34	5.6	120	33	5.4	84	41	5.9	120
NO	45	3.6	291	45	3.4	291	47	3.7	291	34	3.6	291	26	3.7	197	41	3.9	291
HISPANIC																		
YES	43	6.6	84	47	6.6	84	55	6.9	84	37	6.9	84	25	6.6	58	45	7.3	84
NO	45	3.9	235	45	3.9	235	50	4.1	235	33	3.9	235	27	3.7	162	42	4.3	235
DO YOU GO TO SCIENCE MUSEUM W/SOMEONE FROM HOME BY GENDER OF EXAMINEE**																		
MALE																		
YES	61	3.0	366	62	3.0	366	63	3.1	366	44	3.3	366	44	3.5	249	56	3.4	366
NO	55	2.3	690	55	2.1	690	57	2.4	690	41	2.4	690	36	2.4	469	50	2.5	690
FEMALE																		
YES	65	3.3	314	62	3.1	314	62	3.4	314	41	3.6	314	46	3.8	203	56	3.7	314
NO	57	2.3	708	57	2.2	708	57	2.3	708	38	2.4	708	36	2.4	459	50	2.5	708
DO YOU GO TO SCIENCE MUSEUM W/SOMEONE BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	62	2.4	602	61	2.3	602	61	2.4	602	43	2.6	602	43	2.8	402	55	2.7	602
NO	55	1.7	1300	56	1.6	1300	57	1.7	1300	39	1.7	1300	36	1.8	865	50	1.8	1300
NONPUBLIC																		
YES	71	6.3	78	67	6.4	78	67	6.5	78	45	7.3	78	54	7.6	50	61	7.4	78
NO	62	6.0	98	59	6.0	98	60	6.4	98	41	6.5	98	38	6.7	63	53	6.8	98

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SCIENCE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
GO TO MUSEUM COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	2.617	2.210	1.872	1.110	2.860	1.88
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	2.321	2.059	1.591	0.767	2.249	1.54
BLACK						
YES/NO	0.226	-0.63	-0.26	0	1.087	-0.0
HISPANIC						
YES/NO	-0.23	0.262	0.637	0.493	-0.24	0.37
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	1.661	1.697	1.408	0.808	1.775	1.39
FEMALE						
YES/NO	2.022	1.403	1.215	0.759	2.247	1.28
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	2.124	1.849	1.570	1.023	2.253	1.60
NONPUBLIC						
YES/NO	1.011	0.845	0.785	0.367	1.508	0.73

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TABLE 11.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"DO YOU GO TO SCIENCE MUSEUM W/SOMEONE FROM HOME ? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
DO YOU GO TO SCIENCE MUSEUM W/SOMEONE FROM HOME ? **																		
YES	62	4.7	148	63	2.9	319	60	3.6	319	53	3.6	319	57	3.4	319	58	3.7	319
NO	56	2.7	471	56	1.9	917	57	2.1	917	48	2.1	917	51	2.1	917	53	2.2	917
NOT REPORTED	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
TOTAL W/IN SUBSCALE	57	2.3	625	58	1.6	1245	58	1.8	1245	49	1.8	1245	52	1.7	1245	55	1.9	1245
DO YOU GO TO SCIENCE MUSEUM W/SOMESONE FROM HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	64	5.3	114	67	3.2	251	62	4.0	251	55	4.0	251	59	3.8	251	61	4.1	251
NO	58	3.2	329	60	2.2	649	59	2.5	649	51	2.5	649	54	2.4	649	56	2.6	649
BLACK																		
YES	-	-	*	35	10.1	32	48	11.7	32	36	10.8	32	45	10.8	32	43	11.7	32
NO	45	6.8	78	40	4.7	143	48	5.5	143	36	5.2	143	40	5.1	143	43	5.6	143
HISPANIC																		
YES	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
NO	51	8.8	49	43	6.2	93	52	6.9	93	38	6.5	93	45	6.6	93	46	7.0	93
DO YOU GO TO SCIENCE MUSEUM W/SOMEONE FROM HOME BY GENDER OF EXAMINEE**																		
MALE																		
YES	66	6.3	76	67	4.0	167	62	4.9	167	59	4.9	167	59	4.7	167	62	5.0	167
NO	55	3.9	233	61	2.5	452	57	3.0	452	52	3.0	452	53	2.9	452	55	3.1	452
FEMALE																		
YES	58	7.0	72	57	4.2	152	57	5.2	152	47	5.3	152	54	4.9	152	54	5.4	152
NO	56	3.8	238	51	2.8	465	57	3.0	465	43	3.0	465	49	2.9	465	51	3.1	465
DO YOU GO TO SCIENCE MUSEUM W/SOMEONE BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	62	5.0	129	63	3.1	280	60	3.8	280	54	3.8	280	57	3.6	280	58	3.9	280
NO	55	2.9	410	56	2.0	823	57	2.3	823	47	2.2	823	51	2.2	823	53	2.3	823
NONPUBLIC																		
YES	-	-	*	60	9.2	39	61	10.1	39	49	10.4	39	53	9.7	39	56	10.7	39
NO	58	7.1	61	59	5.7	94	59	6.6	94	51	6.7	94	55	6.4	94	56	6.9	94

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical note

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SCIENCE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
GO TO MUSEUM COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	1.222	1.881	0.6711	1.397	1.442	1.144
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	0.875	1.861	0.5889	0.982	1.156	0.982
BLACK						
YES/NO	*	-0.37	-0.007	0	0.468	0.023
HISPANIC						
YES/NO	*	*	*	*	*	*
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	1.491	1.247	0.7966	1.243	1.031	1.101
FEMALE						
YES/NO	0.151	1.229	0.0993	0.578	0.955	0.465
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	1.216	1.976	0.6299	1.519	1.593	1.187
NONPUBLIC						
YES/NO	*	0.120	0.2308	-0.15	-0.16	0.062

* indicates not applicable.

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TABLE 12.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"DO YOU TALK ABOUT SCIENCE TOPICS W/SOMEONE AT HOME ? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
DO YOU TALK ABOUT SCIENCE TOPICS W/SOMEONE AT HOME ?																		
YES	60	2.2	729	59	2.0	729	61	2.2	729	41	2.3	729	40	2.4	474	54	2.4	729
NO	58	1.6	1343	57	1.6	1343	58	1.7	1343	40	1.7	1343	39	1.8	901	51	1.8	1343
NOT REPORTED	39	7.0	52	43	7.8	52	41	7.7	52	30	7.8	52	39	8.9	34	39	8.4	52
TOTAL W/IN SUBSCALE	58	1.3	2124	58	1.2	2124	58	1.3	2124	41	1.4	2124	39	1.4	1409	52	1.4	2124
DO YOU TALK ABOUT SCIENCE TOPICS W/SOMEONE AT HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	64	2.8	438	64	2.6	438	65	2.8	438	44	3.1	438	44	3.2	276	58	3.1	438
NO	62	2.1	824	62	2.0	824	61	2.1	824	43	2.2	824	42	2.3	550	55	2.3	824
BLACK																		
YES	47	5.1	148	45	4.7	148	48	5.1	148	32	5.0	148	31	5.2	98	41	5.4	148
NO	45	3.7	263	43	3.6	263	46	3.9	263	34	3.8	263	27	3.7	183	41	4.0	263
HISPANIC																		
YES	42	5.4	116	48	5.5	116	52	5.9	116	38	5.8	116	24	5.4	82	43	6.1	116
NO	46	4.3	201	44	4.2	201	52	4.4	201	33	4.2	201	28	4.1	136	42	4.7	201
DO YOU TALK ABOUT SCIENCE TOPICS W/SOMEONE AT HOME BY GENDER OF EXAMINEE**																		
MALE																		
YES	57	3.0	360	58	2.9	360	59	3.2	360	43	3.3	360	40	3.5	237	52	3.4	360
NO	57	2.3	691	57	2.2	691	59	2.3	691	42	2.4	691	39	2.5	477	52	2.5	691
FEMALE																		
YES	62	3.1	369	61	2.9	369	63	3.1	369	40	3.3	369	41	3.4	237	55	3.4	369
NO	59	2.4	652	57	2.2	652	56	2.4	652	39	2.5	652	39	2.6	424	51	2.6	652
DO YOU TALK ABOUT SCIENCE TOPICS W/SOMEONE AT HOME BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	59	2.3	665	58	2.1	665	60	2.3	665	41	2.5	665	40	2.6	437	53	2.5	665
NO	57	1.7	1231	57	1.6	1231	58	1.8	1231	40	1.8	1231	37	1.8	825	51	1.9	1231
NONPUBLIC																		
YES	68	7.0	64	68	7.1	64	68	7.2	64	46	8.0	64	44	7.9	37	61	8.1	64
NO	66	5.5	112	60	5.5	112	61	5.9	112	41	6.1	112	48	6.4	76	55	6.3	112

** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

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GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SCIENCE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
TALK ABOUT SCIENCE TOPICS COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	0.662	0.855	0.966	0.377	0.496	0.694
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	0.634	0.584	1.014	0.210	0.530	0.617
BLACK						
YES/NO	0.269	0.237	0.295	-0.36	0.561	0.059
HISPANIC						
YES/NO	-0.54	0.534	0.067	0.612	-0.49	0.168
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	0.026	0.109	-0.15	0.219	0.211	0.070
FEMALE						
YES/NO	0.899	1.128	1.589	0.361	0.514	0.902
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	0.630	0.559	0.716	0.196	0.695	0.473
NONPUBLIC						
YES/NO	0.235	0.876	0.836	0.526	-0.34	0.620

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TABLE 12.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"DO YOU TALK ABOUT SCIENCE TOPICS W/SOMEONE AT HOME ? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
DO YOU TALK ABOUT SCIENCE TOPICS W/SOMEONE AT HOME ? **																		
YES	57	6.7	82	55	4.5	148	56	5.3	148	47	5.2	148	50	5.1	148	52	5.4	148
NO	57	2.5	536	58	1.7	1085	58	2.0	1085	49	2.0	1085	53	1.9	1085	55	2.0	1085
NOT REPORTED	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
TOTAL W/IN SUBSCALE	57	2.3	625	58	1.6	1245	58	1.8	1245	49	1.8	1245	52	1.7	1245	55	1.9	1245
DO YOU TALK ABOUT SCIENCE TOPICS W/SOMEONE AT HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	62	8.1	54	61	5.6	93	59	6.7	93	51	6.7	93	53	6.4	93	56	6.8	93
NO	60	2.9	389	62	1.9	805	60	2.3	805	52	2.3	805	56	2.2	805	57	2.3	805
BLACK																		
YES	-	-	*	36	10.0	32	47	11.6	32	37	11.2	32	40	11.4	32	40	11.8	32
NO	48	6.8	77	39	4.7	142	48	5.5	142	35	5.2	142	41	5.1	142	43	5.6	142
HISPANIC																		
YES	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
NO	49	8.5	50	41	5.8	99	51	6.7	99	39	6.4	99	44	6.4	99	45	6.8	99
DO YOU TALK ABOUT SCIENCE TOPICS W/SOMEONE AT HOME BY GENDER OF EXAMINEE**																		
MALE																		
YES	61	10.6	33	63	6.5	66	62	7.7	66	55	7.9	66	51	7.6	66	58	8.0	66
NO	57	3.5	275	63	2.2	552	58	2.7	552	54	2.7	552	55	2.6	552	57	2.8	552
FEMALE																		
YES	55	8.6	49	48	6.3	82	52	7.2	82	40	6.9	82	50	6.9	82	47	7.4	82
NO	57	3.6	261	53	2.5	533	58	2.8	533	45	2.8	533	50	2.7	533	53	2.9	533
DO YOU TALK ABOUT SCIENCE TOPICS W/SOMEONE AT HOME BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	56	7.1	72	55	4.7	134	55	5.5	134	46	5.4	134	49	5.4	134	51	5.7	134
NO	57	2.7	466	58	1.8	966	58	2.1	966	49	2.1	966	53	2.0	966	55	2.1	966
NONPUBLIC																		
YES	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
NO	58	6.7	70	59	5.1	119	59	5.9	119	50	5.9	119	54	5.6	119	55	6.1	119

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

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GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EATH & SP SCIENCE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
TALK ABOUT SCIENCE TOPICS COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	0.028	-0.74	-0.26	-0.41	-0.47	-0.46
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
WHITE						
YES/NO	0.303	-0.26	-0.07	-0.15	-0.45	-0.19
BLACK						
YES/NO	*	-0.29	-0.13	0.105	-0.11	-0.20
HISPANIC						
YES/NO	*	*	*	*	*	*
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	0.332	-0.01	0.523	0.226	-0.53	0.164
FEMALE						
YES/NO	-0.26	-0.78	-0.80	-0.60	-0.12	-0.67
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=1.96 FOR 1 TEST AT .025)						
PUBLIC						
YES/NO	-0.14	-0.69	-0.38	-0.58	-0.61	-0.55
NONPUBLIC						
YES/NO	*	*	*	*	*	*

* indictes not applicable.

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TABLE 13.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"DO YOU READ SCIENCE BOOKS W/SOMEONE AT HOME? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
DO YOU READ SCIENCE BOOKS W/SOMEONE AT HOME ?																		
YES	55	2.2	748	56	2.0	748	57	2.2	748	40	2.3	748	37	2.4	482	50	2.4	748
NO	60	1.6	1329	59	1.6	1329	60	1.7	1329	41	1.7	1329	40	1.8	896	53	1.8	1329
NOT REPORTED	37	7.4	47	43	8.3	47	41	8.1	47	29	8.2	47	42	9.2	31	39	8.8	47
TOTAL W/IN SUBSCALE	58	1.3	2124	58	1.2	2124	58	1.3	2124	41	1.4	2124	39	1.4	1409	52	1.4	2124
DO YOU READ SCIENCE BOOKS W/SOMEONE AT HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	62	3.1	373	63	2.8	373	64	3.1	373	43	3.3	373	42	3.6	232	56	3.4	373
NO	63	2.0	891	62	1.9	891	62	2.1	891	43	2.2	891	43	2.2	595	56	2.2	891
BLACK																		
YES	44	4.2	204	42	3.9	204	44	4.4	204	32	4.2	204	30	4.5	132	39	4.5	204
NO	48	4.3	210	46	4.1	210	49	4.3	210	36	4.3	210	27	4.1	151	43	4.6	210
HISPANIC																		
YES	43	5.0	140	43	5.0	140	51	5.3	140	35	5.2	140	24	5.0	99	42	5.6	140
NO	45	4.6	177	47	4.4	177	53	4.7	177	35	4.5	177	28	4.4	119	43	5.0	177
DO YOU READ SCIENCE BOOKS W/SOMEONE BY GENDER OF EXAMINEE**																		
MALE																		
YES	54	2.9	404	55	2.8	404	57	3.0	404	41	3.1	404	36	3.3	255	50	3.2	404
NO	59	2.3	651	59	2.2	651	60	2.4	651	43	2.5	651	40	2.5	461	53	2.6	651
FEMALE																		
YES	58	3.2	344	57	3.0	344	58	3.3	344	38	3.4	344	37	3.6	227	51	3.6	344
NO	61	2.3	678	59	2.2	678	59	2.4	678	40	2.5	678	40	2.5	435	53	2.6	678
DO YOU READ SCIENCE BOOKS W/SOMEONE BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	54	2.3	688	56	2.1	688	57	2.3	688	39	2.4	688	37	2.5	443	50	2.5	688
NO	59	1.7	1213	58	1.6	1213	59	1.8	1213	41	1.8	1213	39	1.9	822	52	1.9	1213
NONPUBLIC																		
YES	64	7.4	60	58	7.8	60	61	8.0	60	41	8.0	60	35	8.9	39	54	8.6	60
NO	68	5.4	116	65	5.2	116	65	5.6	116	44	6.1	116	53	6.1	74	59	6.1	116

** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

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GRADE 7
Z TESTS FOR THE DIFFERENCE BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
READ SCIENCE BOOKS COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	-1.70	-1.21	-0.79	-0.59	-1.16	-0.93
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	-0.52	0.33	0.51	-0.03	-0.38	0.02
BLACK						
YES/NO	-0.62	-0.83	-0.84	-0.67	0.35	-0.67
HISPANIC						
YES/NO	-0.28	-0.64	-0.28	-0.01	-0.60	-0.07
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	-1.50	-1.12	-0.78	-0.50	-1.01	-0.89
FEMALE						
YES/NO	-0.86	-0.54	-0.30	-0.38	-0.64	-0.39
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	-1.69	-0.98	-0.65	-0.53	-0.60	-0.76
NONPUBLIC						
YES/NO	-0.40	-0.73	-0.38	-0.31	-1.59	-0.49

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TABLE 13.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"DO YOU READ SCIENCE BOOKS W/SOMEONE AT HOME? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
DO YOU READ SCIENCE BOOKS W/SOMEONE AT HOME ? **																		
YES	64	4.6	145	62	3.2	280	59	3.8	280	53	3.8	280	55	3.6	280	58	3.9	280
NO	55	2.7	473	57	1.8	952	57	2.1	952	48	2.1	952	52	2.0	952	54	2.2	952
NOT REPORTED	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
TOTAL W/IN SUBSCALE	57	2.3	625	58	1.6	1245	58	1.8	1245	49	1.8	1245	52	1.7	1245	55	1.9	1245
DO YOU READ SCIENCE BOOKS W/SOMEONE AT HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	71	5.6	94	69	3.8	185	62	4.7	185	57	4.6	185	60	4.4	185	62	4.7	185
NO	57	3.1	348	60	2.1	713	59	2.4	713	51	2.4	713	54	2.3	713	56	2.5	713
BLACK																		
YES	-	-	*	37	8.0	50	51	9.3	50	36	8.9	50	37	8.6	50	43	9.5	50
NO	47	7.5	65	39	5.0	124	48	5.9	124	36	5.5	124	42	5.5	124	43	6.0	124
HISPANIC																		
YES	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
NO	50	8.8	47	40	6.3	88	51	7.1	88	37	6.6	88	44	6.8	88	45	7.2	88
DO YOU READ SCIENCE BOOKS W/SOMEONE BY GENDER OF EXAMINEE**																		
MALE																		
YES	67	6.1	81	64	4.1	159	60	5.1	159	57	4.9	159	55	4.8	159	60	5.1	159
NO	55	3.9	228	62	2.5	460	58	3.0	460	53	3.0	460	54	2.9	460	56	3.1	460
FEMALE																		
YES	60	7.1	64	59	5.0	121	58	5.8	121	48	5.9	121	55	5.5	121	55	6.0	121
NO	56	3.8	245	51	2.6	492	57	3.0	492	43	2.9	492	49	2.8	492	51	3.0	492
DO YOU READ SCIENCE BOOKS W/SOMEONE BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	64	4.9	129	62	3.3	254	59	4.0	254	53	4.0	254	55	3.8	254	58	4.1	254
NO	55	2.9	409	57	1.9	845	57	2.2	845	48	2.2	845	52	2.1	845	54	2.3	845
NONPUBLIC																		
YES	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
NO	58	7.0	64	57	5.2	107	59	6.2	107	49	6.3	107	53	5.9	107	55	6.4	107

- indicates not applicable.
* indicates N<30
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFFERENCE BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
READ SCIENCE BOOKS COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	1.66	1.45	0.44	1.21	0.78	0.96
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	2.15	1.97	0.59	1.11	1.19	1.16
BLACK						
YES/NO	*	-0.26	0.26	0.07	-0.43	0.04
HISPANIC						
YES/NO	*	*	*	*	*	*
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	1.75	0.44	0.44	0.76	0.20	0.64
FEMALE						
YES/NO	0.46	1.29	0.14	0.66	0.83	0.59
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	1.69	1.34	0.48	1.13	0.69	0.92
NONPUBLIC						
YES/NO	*	*	*	*	*	*

* indicates not applicable.

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TABLE 14.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY COMPOSITE HOME ENVIRONMENT VARIABLE: GRADE 7

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
COMPOSITE VARIABLE																		
0 - 2	58	2.3	687	56	2.2	687	58	2.3	687	40	2.4	687	38	2.5	457	51	2.5	687
3 - 5	58	1.9	1041	59	1.7	1041	58	1.9	1041	41	2.0	1041	39	2.0	688	52	2.1	1041
6 - 8	59	2.9	396	58	2.8	396	60	3.0	396	41	3.2	396	40	3.4	264	53	3.3	396
TOTAL W/IN SUBSCALE	58	1.3	2124	58	1.2	2124	58	1.3	2124	41	1.4	2124	39	1.4	1409	52	1.4	2124
COMPOSITE VARIABLE BY RACE/ETHNICITY OF EXAMINEE **																		
WHITE																		
0 - 2	62	2.9	414	61	2.7	414	63	3.0	414	43	3.2	414	41	3.2	274	55	3.3	414
3 - 5	62	2.2	645	64	2.2	645	62	2.3	645	43	2.5	645	44	2.7	423	56	2.6	645
6 - 8	65	4.2	224	63	3.9	224	65	4.1	224	44	4.2	224	44	4.6	143	58	4.4	224
BLACK																		
0 - 2	45	5.3	131	43	4.9	131	44	5.5	131	33	5.4	131	31	5.4	88	41	5.7	131
3 - 5	45	4.3	205	43	4.2	205	47	4.4	205	34	4.1	205	27	4.3	145	41	4.6	205
6 - 8	43	6.4	94	43	5.9	94	44	6.3	94	30	6.2	94	32	6.9	59	38	6.6	94
HISPANIC																		
0 - 2	43	5.7	114	42	5.6	114	50	5.8	114	34	5.8	114	30	5.2	79	40	6.2	114
3 - 5	46	4.7	151	47	5.0	151	52	5.2	151	34	5.1	151	23	5.3	98	44	5.4	151
6 - 8	39	7.6	64	45	7.2	64	53	7.7	64	36	7.6	64	26	7.5	50	42	8.0	64
COMPOSITE VARIABLE BY GENDER OF EXAMINEE **																		
MALE																		
0 - 2	57	3.2	359	56	3.0	359	59	3.2	359	41	3.4	359	41	3.5	250	52	3.5	359
3 - 5	56	2.5	523	58	2.5	523	58	2.6	523	43	2.8	523	38	2.7	359	52	2.8	523
6 - 8	55	4.3	207	57	4.0	207	60	4.3	207	42	4.3	207	39	4.7	131	52	4.5	207
FEMALE																		
0 - 2	58	3.3	328	56	3.1	328	58	3.4	328	39	3.5	328	35	3.5	207	51	3.7	328
3 - 5	59	2.6	518	59	2.5	518	58	2.7	518	38	2.8	518	41	3.2	329	52	2.9	518
6 - 8	62	4.6	189	59	4.2	189	60	4.5	189	40	4.4	189	41	4.7	133	54	4.8	189
COMPOSITE VARIABLE BY TYPE OF SCHOOL EXAMINEE ATTENDS **																		
PUBLIC																		
0 - 2	57	2.4	634	55	2.2	634	57	2.4	634	40	2.5	634	38	2.6	427	51	2.6	634
3 - 5	56	1.9	947	58	1.8	947	58	2.0	947	40	2.1	947	38	2.2	622	51	2.1	947
6 - 8	58	3.3	365	57	3.0	365	59	3.2	365	41	3.2	365	41	3.4	246	52	3.4	365
NONPUBLIC																		
0 - 2	61	7.8	53	65	8.1	53	66	8.6	53	38	8.9	53	47	9.5	30	57	9.1	53
3 - 5	69	5.6	94	62	6.3	94	60	5.9	94	46	6.5	94	50	6.7	66	58	6.8	94
6 - 8	65	11.1	31	61	11.2	31	70	11.2	31	40	11.4	31	33	13.1	18	57	12.0	31

** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SCIENCE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
COMPOSITE VARIABLE COMPARISONS (Z=2.24 FOR 2 TESTS AT .025)						
0-2/6-8	-0.29	-0.39	-0.44	-0.35	-0.45	-0.38
3-5/6-8	-0.29	0.329	-0.61	-0.21	-0.20	-0.25
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.64 FOR 6 TESTS AT .025)						
WHITE						
0-2/6-8	-0.54	-0.41	-0.43	-0.28	-0.46	-0.43
3-5/6-8	-0.56	0.201	-0.73	-0.30	0.018	-0.41
BLACK						
0-2/6-8	0.265	0.039	0.023	0.415	-0.16	0.263
3-5/6-8	0.336	0	0.365	0.633	-0.64	0.323
HISPANIC						
0-2/6-8	0.440	-0.35	-0.31	-0.27	0.517	-0.16
3-5/6-8	0.702	0.240	-0.08	-0.25	-0.30	0.196
COMPARISONS BY GENDER OF EXAMINEE (Z=2.50 FOR 4 TESTS AT .025)						
MALE						
0-2/6-8	0.357	-0.11	-0.20	-0.29	0.255	-0.01
3-5/6-8	0.181	0.316	-0.41	0.097	-0.27	0
FEMALE						
0-2/6-8	-0.74	-0.45	-0.44	-0.21	-1.02	-0.54
3-5/6-8	-0.55	0.122	-0.44	-0.39	-0.12	-0.35
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.50 FOR 4 TESTS AT .025)						
PUBLIC						
0-2/6-8	-0.22	-0.61	-0.42	-0.29	-0.81	-0.41
3-5/6-8	-0.45	0.283	-0.37	-0.41	-0.85	-0.29
NONPUBLIC						
0-2/6-8	-0.27	0.317	-0.24	-0.18	0.886	-0.05
3-5/6-8	0.272	0.085	-0.75	0.435	1.153	0.007

TABLE 14.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY COMPOSITE HOME ENVIRONMENT VARIABLE: GRADE 11

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
COMPOSITE VARIABLE																		
0 - 2	54	4.0	224	55	2.7	440	57	3.1	440	47	3.1	440	51	3.0	440	53	3.2	440
3 - 5	55	3.4	295	57	2.3	605	57	2.6	605	48	2.6	605	52	2.5	605	54	2.7	605
6 - 8	68	5.3	106	65	3.6	200	61	4.5	200	56	4.4	200	58	4.2	200	61	4.5	200
TOTAL W/IN SUBSCALE	57	2.3	625	58	1.6	1245	58	1.8	1245	49	1.8	1245	52	1.7	1245	55	1.9	1245
COMPOSITE VARIABLE BY RACE/ETHNICITY OF EXAMINEE **																		
WHITE																		
0 - 2	56	4.8	154	59	3.2	316	59	3.6	316	50	3.7	316	54	3.5	316	55	3.8	316
3 - 5	58	3.9	217	61	2.6	447	58	3.1	447	51	3.1	447	54	2.9	447	56	3.2	447
6 - 8	71	6.1	76	72	4.1	144	64	5.3	144	59	5.2	144	63	4.9	144	65	5.3	144
BLACK																		
0 - 2	46	9.1	42	42	6.7	66	47	8.1	66	34	7.5	66	39	7.6	66	42	8.2	66
3 - 5	45	9.7	40	37	6.2	85	49	7.2	85	38	6.8	85	44	6.6	85	44	7.2	85
6 - 8	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
HISPANIC																		
0 - 2	-	-	*	38	8.6	43	51	10.0	43	37	9.6	43	40	9.7	43	44	10.2	43
3 - 5	-	-	*	47	8.3	55	51	9.1	55	38	8.4	55	47	8.7	55	46	9.2	55
6 - 8	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
COMPOSITE VARIABLE BY GENDER OF EXAMINEE **																		
MALE																		
0 - 2	54	5.7	113	61	3.5	225	57	4.2	225	50	4.3	225	53	4.2	225	54	4.4	225
3 - 5	53	4.8	146	61	3.2	292	57	3.8	292	53	3.7	292	54	3.6	292	56	3.9	292
6 - 8	75	7.1	53	72	4.6	107	65	6.1	107	62	5.9	107	61	5.8	107	65	6.1	107
FEMALE																		
0 - 2	55	5.5	111	49	4.1	215	57	4.5	215	43	4.4	215	48	4.2	215	51	4.6	215
3 - 5	57	4.8	149	53	3.2	313	57	3.7	313	43	3.6	313	50	3.5	313	52	3.8	313
6 - 8	60	8.0	53	58	5.6	93	58	6.6	93	49	6.7	93	55	6.1	93	55	6.8	93
COMPOSITE VARIABLE BY TYPE OF SCHOOL EXAMINEE ATTENDS **																		
PUBLIC																		
0 - 2	54	4.2	200	55	2.8	399	57	3.2	399	47	3.2	399	50	3.1	399	53	3.3	399
3 - 5	54	3.7	250	57	2.4	531	57	2.8	531	48	2.8	531	52	2.7	531	54	2.9	531
6 - 8	68	5.6	95	65	3.7	182	61	4.7	182	55	4.6	182	58	4.4	182	60	4.7	182
NONPUBLIC																		
0 - 2	-	-	*	56	8.8	41	59	9.8	41	50	10.1	41	53	9.7	41	54	10.4	41
3 - 5	58	8.3	45	57	6.4	74	58	7.5	74	48	7.6	74	54	7.1	74	55	7.8	74
6 - 8	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SCIENCE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
COMPOSITE VARIABLE COMPARISONS (Z=2.24 FOR 2 TESTS AT .025)						
0-2/6-8	-2.01	-2.18	-0.79	-1.55	-1.37	-1.40
3-5/6-8	-2.02	-1.90	-0.92	-1.44	-0.85	-1.24
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
WHITE						
0-2/6-8	-1.97	-2.40	-0.81	-1.35	-1.53	-1.43
3-5/6-8	-1.88	-2.14	-1.03	-1.35	-1.70	-1.37
BLACK						
0-2/6-8	*	*	*	*	*	*
3-5/6-8	*	*	*	*	*	*
HISPANIC						
0-2/6-8	*	*	*	*	*	*
3-5/6-8	*	*	*	*	*	*
COMPARISONS BY GENDER OF EXAMINEE (Z=2.50 FOR 4 TESTS AT .025)						
MALE						
0-2/6-8	-2.33	-1.90	-1.00	-1.55	-1.12	-1.42
3-5/6-8	-2.55	-1.85	-1.09	-1.18	-1.04	-1.20
FEMALE						
0-2/6-8	-0.54	-1.20	-0.07	-0.64	-0.83	-0.54
3-5/6-8	-0.35	-0.72	-0.14	-0.69	-0.62	-0.50
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
0-2/6-8	-2.04	-1.97	-0.70	-1.41	-1.35	-1.30
3-5/6-8	-2.03	-1.68	-0.80	-1.22	-1.16	-1.15
NONPUBLIC						
0-2/6-8	*	*	*	*	*	*
3-5/6-8	*	*	*	*	*	*

TABLE 15.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"DOES YOUR FAMILY GET A NEWSPAPER REGULARLY? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
DOES YOUR FAMILY GET A NEWSPAPER REGULARLY ?																		
YES	56	0.9	4331	52	0.7	6157	52	0.7	7190	42	0.8	6162	39	0.8	5148	49	0.7	8210
NO	50	1.6	1477	45	1.3	2031	47	1.3	2398	39	1.4	2041	35	1.3	1711	44	1.3	2713
NOT REPORTED	42	4.2	205	41	3.3	284	42	3.2	333	36	3.6	277	34	3.4	243	39	3.2	375
TOTAL W/IN SUBSCALE	54	0.8	6013	50	0.6	8472	50	0.6	9921	41	0.7	8480	38	0.7	7102	47	0.6	11298
DOES YOUR FAMILY GET A NEWSPAPER BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	59	1.1	2901	54	0.9	4079	55	0.9	4737	44	1.0	4084	42	1.0	3381	51	0.9	5431
NO	54	2.3	723	48	1.9	986	50	1.8	1169	42	2.0	983	39	1.9	829	47	1.8	1321
BLACK																		
YES	44	2.2	806	41	1.7	1195	40	1.6	1412	34	1.8	1195	31	1.7	1017	38	1.6	1590
NO	42	3.4	336	40	2.6	481	40	2.6	575	32	2.7	492	29	2.6	418	37	2.5	650
HISPANIC																		
YES	44	2.7	518	41	2.1	736	43	2.1	863	35	2.3	725	31	2.2	623	39	2.1	991
NO	41	3.2	363	40	2.6	492	42	2.6	562	36	2.7	493	28	2.6	402	38	2.6	641
DOES YOUR FAMILY GET A NEWSPAPER REGULARLY BY GENDER OF EXAMINEE**																		
MALE																		
YES	55	1.3	2212	53	1.0	3142	52	1.0	3647	44	1.1	3144	40	1.1	2640	49	1.0	4172
NO	50	2.3	748	46	1.8	1012	47	1.8	1175	41	2.0	1010	36	1.9	832	44	1.8	1348
FEMALE																		
YES	57	1.4	2119	50	1.1	3015	51	1.0	3543	39	1.1	3018	39	1.1	2508	48	1.0	4038
NO	49	2.3	729	45	1.8	1019	47	1.8	1223	37	1.9	1031	34	1.8	879	43	1.8	1365
DOES YOUR FAMILY GET A NEWSPAPER REGULARLY BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	55	1.0	3935	51	0.8	5619	51	0.8	6547	41	0.8	5618	39	0.8	4693	48	0.8	7480
NO	49	1.7	1396	45	1.3	1926	46	1.3	2270	38	1.4	1927	34	1.3	1613	43	1.3	2570
NONPUBLIC																		
YES	61	3.1	396	58	2.6	538	55	2.4	642	45	2.7	543	44	2.6	454	53	2.5	729
NO	59	6.8	81	48	5.9	104	54	5.2	126	45	6.0	113	44	5.7	97	50	5.6	141

** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFFERENCE BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
GET A NEWSPAPER COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	3.36	4.17	3.36	1.76	2.96	3.44
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	2.04	2.95	2.22	0.89	1.54	2.12
BLACK						
YES/NO	0.50	0.29	0.26	0.49	0.90	0.50
HISPANIC						
YES/NO	0.50	0.41	0.24	-0.20	0.94	0.43
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	1.95	3.04	2.53	1.41	1.88	2.54
FEMALE						
YES/NO	2.86	2.76	2.17	0.98	2.31	2.28
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	3.30	3.53	3.31	1.77	3.13	3.20
NONPUBLIC						
YES/NO	0.21	1.53	0.05	0.02	-0.08	0.43

TABLE 15.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"DOES YOUR FAMILY GET A NEWSPAPER REGULARLY? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
DOES YOUR FAMILY GET A NEWSPAPER REGULARLY ?																		
YES	58	0.9	4431	61	0.8	4854	59	0.9	4963	50	0.9	4702	51	0.8	5091	57	0.9	5346
NO	52	1.9	951	55	1.7	1029	51	1.9	1057	45	1.9	996	42	1.8	1079	50	2.0	1134
NOT REPORTED	49	8.7	46	54	7.7	45	47	8.8	47	41	8.9	46	37	8.2	53	43	8.9	54
TOTAL W/IN SUBSCALE	57	0.8	5428	60	0.7	5928	58	0.8	6067	49	0.8	5744	49	0.8	6223	56	0.8	6534
DOES YOUR FAMILY GET A NEWSPAPER BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	60	1.0	3382	64	0.9	3716	62	1.0	3808	52	1.0	3595	53	1.0	3896	59	1.0	4085
NO	57	2.7	500	60	2.4	550	56	2.6	568	48	2.6	531	46	2.5	572	55	2.7	601
BLACK																		
YES	47	2.5	573	46	2.3	627	45	2.5	643	38	2.4	606	38	2.3	657	44	2.5	698
NO	45	4.3	212	44	3.9	227	39	4.1	228	40	4.0	219	31	3.8	234	41	4.2	249
HISPANIC																		
YES	51	3.3	343	48	3.0	364	48	3.3	367	40	3.1	357	41	3.1	382	47	3.3	401
NO	43	4.5	178	49	4.1	189	43	4.5	196	38	4.4	179	36	4.2	202	43	4.6	211
DOES YOUR FAMILY GET A NEWSPAPER REGULARLY BY GENDER OF EXAMINEE**																		
MALE																		
YES	59	1.2	2266	65	1.1	2472	60	1.2	2533	54	1.2	2424	52	1.2	2600	59	1.2	2731
NO	54	2.7	471	58	2.4	511	51	2.7	519	49	2.7	496	45	2.6	537	52	2.8	560
FEMALE																		
YES	58	1.3	2165	57	1.1	2382	58	1.3	2430	45	1.3	2278	49	1.2	2491	55	1.3	2615
NO	51	2.8	480	51	2.5	518	51	2.7	538	41	2.7	500	39	2.6	542	48	2.8	574
DOES YOUR FAMILY GET A NEWSPAPER REGULARLY BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	58	0.9	3900	61	0.8	4293	59	0.9	4383	50	0.9	4152	50	0.9	4501	57	0.9	4725
NO	52	2.0	877	54	1.8	953	50	2.0	976	45	2.0	923	41	1.9	996	50	2.0	1045
NONPUBLIC																		
YES	61	2.5	531	63	2.3	561	61	2.5	580	50	2.6	550	53	2.5	590	58	2.6	621
NO	53	7.1	74	64	6.4	76	59	6.9	81	50	7.2	73	51	6.9	83	57	7.0	89

** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
GET A NEWSPAPER COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	2.712	3.340	3.924	2.102	4.431	3.066
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	0.985	1.464	1.991	1.240	2.540	1.496
BLACK						
YES/NO	0.403	0.484	1.181	-0.36	1.621	0.631
HISPANIC						
YES/NO	1.512	-0.09	0.784	0.316	1.008	0.796
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	1.802	2.528	3.034	1.705	2.742	2.148
FEMALE						
YES/NO	2.096	2.306	2.445	1.270	3.596	2.219
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	2.417	3.549	3.978	2.155	4.495	3.067
NONPUBLIC	1.106	-0.19	0.313	0.052	0.315	0.253

TABLE 16.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"IS THERE A DICTIONARY IN YOUR HOME? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
IS THERE A DICTIONARY IN YOUR HOME?																		
YES	55	0.8	5714	50	0.6	8076	51	0.6	9443	41	0.7	8071	39	0.7	6741	48	0.6	10761
NO	39	4.5	186	32	3.6	231	36	3.6	278	31	3.8	244	27	3.5	208	34	3.5	319
NOT REPORTED	40	5.2	113	44	4.3	165	41	4.1	200	36	4.6	165	35	4.2	153	38	4.1	218
TOTAL W/IN SUBSCALE	54	0.8	6013	50	0.6	8472	50	0.6	9921	41	0.7	8480	38	0.7	7102	47	0.6	11298
IS THERE A DICTIONARY IN YOUR HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	58	1.0	3575	54	0.8	5010	54	0.8	5842	44	0.9	5011	41	0.9	4159	51	0.8	6674
NO	45	7.2	78	33	5.9	92	38	5.8	112	32	6.0	96	28	5.8	82	36	5.5	132
BLACK																		
YES	43	1.9	1122	41	1.4	1655	40	1.4	1952	34	1.5	1657	31	1.4	1405	38	1.4	2208
NO	33	8.8	48	31	7.3	57	28	6.6	75	29	7.7	60	23	6.8	57	30	6.9	80
HISPANIC																		
YES	43	2.1	855	41	1.7	1188	43	1.7	1378	36	1.8	1170	30	1.7	986	39	1.6	1578
NO	34	8.1	55	30	6.4	76	39	6.7	83	31	6.5	82	31	6.0	65	32	6.2	99
IS THERE A DICTIONARY IN YOUR HOME BY GENDER OF EXAMINEE**																		
MALE																		
YES	54	1.1	2897	52	0.9	4079	52	0.9	4718	44	1.0	4061	40	0.9	3390	49	0.9	5406
NO	40	5.8	108	32	4.8	127	38	4.8	159	31	4.8	141	27	5.0	120	34	4.6	183
FEMALE																		
YES	55	1.2	2817	49	0.9	3997	50	0.9	4725	39	1.0	4010	38	1.0	3351	47	0.9	5355
NO	39	7.2	78	32	5.6	104	34	5.6	119	32	6.0	103	27	4.9	88	33	5.4	136
IS THERE A DICTIONARY IN YOUR HOME BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	54	0.9	5238	50	0.7	7433	50	0.7	8671	41	0.7	7412	38	0.7	6190	47	0.7	9888
NO	39	4.6	182	32	3.7	226	36	3.7	273	31	3.8	240	26	3.6	203	34	3.5	313
NONPUBLIC																		
YES	60	2.8	476	57	2.4	642	55	2.2	769	45	2.5	657	44	2.4	549	52	2.3	870
NO	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
HAVE A DICTIONARY COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	3.297	4.992	3.965	2.633	3.212	3.932
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	1.878	3.507	2.767	1.841	2.336	2.692
BLACK						
YES/NO	1.188	1.328	1.885	0.548	1.188	1.173
HISPANIC						
YES/NO	1.038	1.629	0.489	0.695	-0.14	1.055
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	2.396	4.056	2.864	2.632	2.488	3.136
FEMALE						
YES/NO	2.241	2.990	2.810	1.150	2.130	2.444
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=1.96 FOR 1 TEST AT .025)						
PUBLIC						
YES/NO	3.156	4.781	3.824	2.426	3.284	3.755
NONPUBLIC						
YES/NO	*	*	*	*	*	*

* indicates not applicable.

TABLE 16.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"IS THERE A DICTIONARY IN YOUR HOME? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
IS THERE A DICTIONARY IN YOUR HOME?																		
YES	57	0.8	5362	60	0.7	5861	58	0.8	5996	49	0.8	5668	49	0.8	6141	56	0.8	6451
NO	40	9.8	32	42	9.1	36	43	10.1	37	41	9.5	41	35	9.1	43	41	10.0	43
NOT REPORTED	42	9.2	34	57	9.0	31	52	10.3	34	41	9.8	35	35	9.3	39	46	10.1	40
TOTAL W/IN SUBSCALE	57	0.8	5428	60	0.7	5928	58	0.8	6067	49	0.8	5744	49	0.8	6223	56	0.8	6534
IS THERE A DICTIONARY IN YOUR HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	60	0.9	3863	63	0.8	4249	61	0.9	4358	51	0.9	4106	52	0.9	4447	59	1.0	4665
NO	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
BLACK																		
YES	46	2.2	782	45	2.0	850	44	2.1	867	39	2.1	820	36	2.0	886	43	2.2	942
NO	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
HISPANIC																		
YES	48	2.7	517	49	2.4	546	46	2.7	555	39	2.6	526	39	2.5	575	46	2.7	603
NO	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
IS THERE A DICTIONARY IN YOUR HOME BY GENDER OF EXAMINEE**																		
MALE																		
YES	58	1.1	2717	64	1.0	2966	59	1.1	3031	53	1.1	2895	51	1.1	3112	58	1.1	3266
NO	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
FEMALE																		
YES	57	1.2	2645	56	1.0	2895	57	1.1	2965	45	1.2	2773	47	1.1	3029	54	1.2	3185
NO	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*
IS THERE A DICTIONARY IN YOUR HOME BY TYPE OF SCHOOL EXAMINEE ATTENDS*																		
PUBLIC																		
YES	57	0.9	4757	60	0.8	5224	58	0.8	5335	49	0.8	5045	49	0.8	5468	55	0.9	5741
NO	38	10.1	30	43	9.3	35	43	10.3	36	42	9.8	39	35	9.3	41	41	10.2	41
NONPUBLIC																		
YES	60	2.4	605	63	2.2	637	61	2.4	661	50	2.4	623	53	2.3	673	58	2.4	710
NO	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
HAVE A DICTIONARY COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	1.803	1.965	1.435	0.786	1.597	1.440
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE						
WHITE						
YES/NO	*	*	*	*	*	*
BLACK						
YES/NO	*	*	*	*	*	*
HISPANIC						
YES/NO	*	*	*	*	*	*
COMPARISONS BY GENDER OF EXAMINEE						
MALE						
YES/NO	*	*	*	*	*	*
FEMALE						
YES/NO	*	*	*	*	*	*
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=1.96 FOR 1 TEST AT .025)						
PUBLIC						
YES/NO	1.873	1.791	1.467	0.709	1.523	1.419
NONPUBLIC						
YES/NO	*	*	*	*	*	*

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TABLE 17.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"IS THERE AN ENCYCLOPEDIA IN YOUR HOME? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
IS THERE AN ENCYCLOPEDIA IN YOUR HOME?																		
YES	55	0.9	4628	51	0.7	6488	51	0.7	7606	42	0.8	6509	39	0.8	5442	48	0.7	8665
NO	51	1.8	1163	47	1.4	1648	48	1.4	1921	40	1.5	1641	36	1.5	1382	45	1.4	2192
NOT REPORTED	41	3.9	222	41	3.1	336	40	3.0	394	35	3.3	330	32	3.2	278	38	3.0	441
TOTAL W/IN SUBSCALE	54	0.8	6013	50	0.6	8472	50	0.6	9921	41	0.7	8480	38	0.7	7102	47	0.6	11298
IS THERE AN ENCYCLOPEDIA IN YOUR HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	58	1.1	3009	54	0.9	4174	54	0.9	4880	44	1.0	4202	41	0.9	3483	51	0.9	5576
NO	57	2.6	587	52	2.0	829	53	2.0	966	43	2.2	810	41	2.1	692	49	2.0	1105
BLACK																		
YES	44	2.1	870	41	1.6	1284	41	1.6	1519	34	1.7	1288	31	1.6	1095	38	1.6	1711
NO	41	3.7	276	39	2.9	388	38	2.8	464	32	3.0	392	29	3.0	336	36	2.8	527
HISPANIC																		
YES	44	2.5	624	43	2.0	861	44	2.0	994	36	2.1	842	31	2.0	715	40	1.9	1142
NO	39	3.8	262	36	2.9	378	40	2.9	429	34	3.0	383	27	2.9	311	36	2.9	492
IS THERE AN ENCYCLOPEDIA IN YOUR HOME BY GENDER OF EXAMINEE**																		
MALE																		
YES	55	1.3	2347	52	1.0	3294	52	1.0	3805	44	1.1	3282	40	1.1	2743	49	1.0	4371
NO	51	2.5	589	47	2.0	824	49	2.0	961	42	2.2	826	37	2.1	690	45	2.0	1091
FEMALE																		
YES	56	1.3	2281	49	1.0	3194	51	1.0	3801	39	1.1	3227	38	1.1	2699	47	1.0	4294
NO	52	2.6	574	47	2.0	824	47	2.0	960	38	2.2	815	36	2.0	692	44	2.0	1101
IS THERE AN ENCYCLOPEDIA IN YOUR HOME BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	55	1.0	4208	50	0.8	5921	51	0.7	6931	41	0.8	5929	38	0.8	4958	48	0.7	7898
NO	50	1.9	1106	47	1.5	1573	48	1.4	1828	39	1.6	1564	36	1.5	1314	44	1.4	2089
NONPUBLIC																		
YES	60	3.0	420	56	2.5	566	55	2.4	674	45	2.7	580	44	2.6	484	52	2.4	766
NO	65	8.1	57	59	6.4	75	52	6.3	92	44	7.4	76	45	6.9	67	51	6.6	102

** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

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GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
HAVE ENCYCLOPEDIA COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	1.863	2.321	2.104	1.217	1.581	2.235
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	0.498	0.721	0.598	0.122	0.349	0.688
BLACK						
YES/NO	0.628	0.515	0.775	0.692	0.712	0.656
HISPANIC						
YES/NO	1.183	1.759	1.046	0.705	1.123	1.381
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	1.369	2.389	1.445	1.144	1.282	1.807
FEMALE						
YES/NO	1.266	0.917	1.575	0.493	0.952	1.308
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	1.996	2.256	1.918	1.073	1.539	2.111
NONPUBLIC						
YES/NO	-0.61	-0.31	0.429	0.050	-0.19	0.128

TABLE 17.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"IS THERE AN ENCYCLOPEDIA IN YOUR HOME? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
IS THERE AN ENCYCLOPEDIA IN YOUR HOME?																		
YES	58	0.9	4665	61	0.8	5114	59	0.9	5226	49	0.9	4938	50	0.8	5365	56	0.9	5632
NO	54	2.2	694	57	2.0	746	55	2.2	771	46	2.2	734	46	2.1	781	53	2.3	824
NOT REPORTED	47	6.8	69	43	6.7	68	46	7.3	70	38	6.7	72	32	6.5	77	41	7.3	78
TOTAL W/IN SUBSCALE	57	0.8	5428	60	0.7	5928	58	0.8	6067	49	0.8	5744	49	0.8	6223	56	0.8	6534
IS THERE AN ENCYCLOPEDIA IN YOUR HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	60	1.0	3431	63	0.9	3784	61	1.0	3874	52	1.0	3648	52	1.0	3963	59	1.0	4155
NO	59	2.8	430	62	2.5	463	60	2.8	483	49	2.8	455	51	2.8	483	58	2.9	509
BLACK																		
YES	47	2.3	671	46	2.1	726	45	2.3	740	39	2.2	707	37	2.1	764	44	2.3	811
NO	39	5.7	109	43	5.1	122	39	5.4	125	38	5.7	111	32	5.2	121	39	5.7	130
HISPANIC																		
YES	49	3.0	416	49	2.7	443	47	3.0	450	39	2.9	424	40	2.8	465	47	3.0	488
NO	44	5.6	103	48	5.3	108	43	5.9	111	40	5.5	111	36	5.4	118	43	5.8	123
IS THERE AN ENCYCLOPEDIA IN YOUR HOME BY GENDER OF EXAMINEE**																		
MALE																		
YES	59	1.2	2375	64	1.1	2596	60	1.2	2652	54	1.2	2531	52	1.2	2730	59	1.2	2864
NO	54	3.1	341	60	2.8	370	55	3.1	381	50	3.1	367	47	3.0	387	54	3.2	407
FEMALE																		
YES	57	1.2	2290	57	1.1	2518	57	1.2	2574	45	1.2	2407	47	1.2	2635	54	1.3	2768
NO	54	3.1	353	54	2.9	376	55	3.1	390	42	3.2	367	46	3.0	394	52	3.2	417
IS THERE AN ENCYCLOPEDIA IN YOUR HOME BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	57	0.9	4105	60	0.8	4520	58	0.9	4612	49	0.9	4360	49	0.9	4739	56	0.9	4973
NO	54	2.3	648	56	2.1	703	54	2.3	724	45	2.3	688	46	2.2	733	52	2.3	772
NONPUBLIC																		
YES	60	2.5	560	62	2.2	594	60	2.5	614	50	2.5	578	52	2.4	626	58	2.5	659
NO	58	8.7	46	72	8.4	43	65	8.6	47	55	9.0	46	54	8.4	48	62	9.0	52

** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
HAVE ENCYCLOPEDIA COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	1.477	1.718	1.563	1.389	1.441	1.276
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	0.201	0.445	0.437	1.030	0.478	0.260
BLACK						
YES/NO	1.339	0.521	0.964	0.113	1.018	0.748
HISPANIC						
YES/NO	0.774	0.283	0.634	-0.16	0.636	0.609
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	1.374	1.520	1.445	1.170	1.488	1.227
FEMALE						
YES/NO	0.745	0.912	0.770	0.826	0.553	0.550
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	1.382	2.064	1.750	1.626	1.430	1.388
NONPUBLIC						
YES/NO	0.297	-1.15	-0.56	-0.55	-0.13	-0.39

TABLE 18.1: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 7
"ARE THERE MORE THAN 25 BOOKS IN YOUR HOME? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
ARE THERE MORE THAN 25 BOOKS IN YOUR HOME?																		
YES	55	0.8	5403	51	0.7	7647	51	0.7	8925	42	0.7	7625	39	0.7	6372	48	0.7	10167
NO	40	3.6	296	37	2.8	393	39	2.8	463	33	3.0	403	30	2.9	339	36	2.8	534
NOT REPORTED	41	3.4	314	41	2.7	432	42	2.6	533	34	2.8	452	30	2.6	391	38	2.6	597
TOTAL W/IN SUBSCALE	54	0.8	6013	50	0.6	8472	50	0.6	9921	41	0.7	8480	38	0.7	7102	47	0.6	11298
ARE THERE MORE THAN 25 BOOKS IN YOUR HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	59	1.0	3504	54	0.8	4918	54	0.8	5712	44	0.9	4903	41	0.9	4070	51	0.8	6535
NO	41	7.0	80	41	5.6	99	44	5.3	134	38	6.2	105	37	5.8	94	40	5.3	148
BLACK																		
YES	44	2.0	1003	41	1.5	1475	41	1.5	1749	34	1.6	1480	31	1.5	1253	38	1.5	1974
NO	36	6.2	101	37	4.8	142	33	4.7	162	30	5.0	143	26	4.7	125	32	4.7	182
HISPANIC																		
YES	43	2.3	746	42	1.8	1048	43	1.8	1208	36	1.9	1026	31	1.8	873	40	1.8	1374
NO	38	6.0	104	33	4.9	137	37	4.9	151	32	4.9	141	25	5.0	108	34	4.6	187
ARE THERE MORE THAN 25 BOOKS IN YOUR HOME BY GENDER OF EXAMINEE**																		
MALE																		
YES	54	1.2	2758	52	0.9	3879	52	0.9	4488	44	1.0	3871	40	1.0	3232	49	0.9	5147
NO	40	5.1	145	38	4.0	202	41	4.0	232	34	4.3	200	36	4.3	164	37	3.9	266
FEMALE																		
YES	56	1.2	2645	50	1.0	3768	51	0.9	4437	39	1.0	3754	38	1.0	3140	47	0.9	5020
NO	40	5.1	151	35	4.0	191	36	4.0	231	33	4.3	203	26	4.0	175	34	3.9	268
ARE THERE MORE THAN 25 BOOKS IN YOUR HOME BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	55	0.9	4946	50	0.7	7024	51	0.7	8182	41	0.8	6990	38	0.7	5842	48	0.7	9326
NO	39	3.7	284	37	2.9	382	39	2.9	448	34	3.1	391	30	3.0	328	36	2.8	517
NONPUBLIC																		
YES	61	2.9	457	57	2.4	622	55	2.2	741	45	2.5	634	44	2.4	529	53	2.3	839
NO	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

SOURCE: U.S. DEPARTMENT OF EDUCATION, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS - 1985-86 SCIENCE ASSESSMENT

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GRADE 7
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
MORE THAN 25 BOOKS COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	4.159	4.838	4.429	2.626	2.852	4.325
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	2.522	2.289	1.990	0.832	0.677	2.040
BLACK						
YES/NO	1.284	0.779	1.653	0.814	0.991	1.239
HISPANIC						
YES/NO	0.747	1.794	1.075	0.774	1.100	1.188
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	2.771	3.380	2.685	2.403	0.950	2.840
FEMALE						
YES/NO	3.131	3.508	3.556	1.256	2.956	3.305
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=1.96 FOR 1 TEST AT .025)						
PUBLIC						
YES/NO	4.008	4.534	4.189	2.360	2.685	4.149
NONPUBLIC						
YES/NO	*	*	*	*	*	*

* indicates not applicable.

TABLE 18.2: AVERAGE PERCENT CORRECT ON 1985-86 NAEP SCIENCE SUBSCALES BY HOME ENVIRONMENT: GRADE 11
"ARE THERE MORE THAN 25 BOOKS IN YOUR HOME? "

	NATURE SCIENCE			EARTH & SPACE			LIFE SCIENCE			PHYSICS			CHEMISTRY			TOTAL ACROSS SUBSCALES		
	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N	AVG %	SE	N
ARE THERE MORE THAN 25 BOOKS IN YOUR HOME?																		
YES	58	0.8	5178	61	0.7	5661	59	0.8	5788	49	0.8	5477	50	0.8	5933	56	0.8	6230
NO	44	4.9	147	45	4.4	159	43	4.7	165	33	4.4	161	35	4.4	174	42	4.8	181
NOT REPORTED	43	6.0	103	42	5.1	108	45	5.7	114	44	5.7	106	33	5.5	116	42	5.9	123
TOTAL W/IN SUBSCALE	57	0.8	5428	60	0.7	5928	58	0.8	6067	49	0.8	5744	49	0.8	6223	56	0.8	6534
ARE THERE MORE THAN 25 BOOKS IN YOUR HOME BY RACE/ETHNICITY OF EXAMINEE**																		
WHITE																		
YES	60	1.0	3787	64	0.8	4164	62	0.9	4267	52	1.0	4025	52	0.9	4358	59	1.0	4568
NO	49	7.2	64	51	6.7	68	51	7.1	73	39	6.9	71	40	6.7	77	48	7.3	81
BLACK																		
YES	46	2.2	737	46	2.0	794	44	2.2	812	39	2.2	772	37	2.0	832	44	2.2	884
NO	41	10.9	35	40	8.5	44	32	9.0	44	30	9.2	39	28	8.8	43	34	9.6	46
HISPANIC																		
YES	49	2.8	467	50	2.5	500	47	2.8	506	40	2.7	480	40	2.7	526	47	2.8	553
NO	39	9.2	42	39	8.5	43	38	9.4	44	26	8.0	44	31	8.2	47	35	9.3	47
ARE THERE MORE THAN 25 BOOKS IN YOUR HOME BY GENDER OF EXAMINEE**																		
MALE																		
YES	59	1.1	2624	64	1.0	2863	60	1.1	2924	53	1.1	2797	52	1.1	3009	58	1.1	3155
NO	42	7.1	70	48	6.6	77	44	6.7	80	37	6.4	80	38	6.5	84	44	6.9	88
FEMALE																		
YES	57	1.2	2554	57	1.1	2798	58	1.2	2864	45	1.2	2680	48	1.1	2924	54	1.2	3075
NO	46	6.9	77	43	5.9	82	42	6.7	85	30	6.2	81	32	5.9	90	39	6.7	93
ARE THERE MORE THAN 25 BOOKS IN YOUR HOME BY TYPE OF SCHOOL EXAMINEE ATTENDS**																		
PUBLIC																		
YES	57	0.9	4579	60	0.8	5029	58	0.9	5132	49	0.9	4857	49	0.8	5265	56	0.9	5526
NO	44	5.0	142	45	4.4	156	43	4.8	162	33	4.5	157	35	4.4	169	41	4.9	176
NONPUBLIC																		
YES	60	2.4	599	63	2.2	632	61	2.4	656	50	2.4	620	53	2.3	668	58	2.5	704
NO	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*	-	-	*

- indicates not applicable.
* indicates N<30.
** Small subcategories were not included; so sample sizes may not match totals. See technical notes for discussion.

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GRADE 11
Z TESTS FOR THE DIFF BETWEEN 2 PROPORTIONS

	NATURE SCIENCE	EARTH & SPACE	LIFE SCIENCE	PHYSICS	CHEMISTRY	TOTAL
HAVE MORE THAN 25 BOOKS COMPARISONS (Z=1.96 FOR 1 TEST AT .025)						
YES/NO	2.694	3.455	3.179	3.521	3.373	3.005
COMPARISONS BY RACE/ETHNICITY OF EXAMINEE (Z=2.40 FOR 3 TESTS AT .025)						
WHITE						
YES/NO	1.587	1.841	1.537	1.745	1.890	1.516
BLACK						
YES/NO	0.431	0.684	1.304	0.977	1.009	0.937
HISPANIC						
YES/NO	1.060	1.215	0.975	1.730	1.015	1.182
COMPARISONS BY GENDER OF EXAMINEE (Z=2.24 FOR 2 TESTS AT .025)						
MALE						
YES/NO	2.281	2.466	2.257	2.568	2.072	2.070
FEMALE						
YES/NO	1.553	2.323	2.244	2.344	2.614	2.136
COMPARISONS BY TYPE OF SCHOOL EXAMINEE ATTENDS (Z=2.24 FOR 2 TESTS AT .025)						
PUBLIC						
YES/NO	2.718	3.503	3.233	3.429	3.258	2.983
NONPUBLIC						
YES/NO	*	*	*	*	*	*

* indicates not applicble.

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